| Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Navy | | | | | | | | | | | Date: April 2022 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Appropriation/Budget Activity<br>1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)* | | | | | R-1 Program Element (Number/Name)<br>PE 0604270N *I Electronic Warfare (EW) Dev* | | | | | | | |
| **COST ($ in Millions)** | **Prior Years** | **FY 2021** | **FY 2022** | **FY 2023 Base** | **FY 2023 OCO** | **FY 2023 Total** | **FY 2024** | **FY 2025** | **FY 2026** | **FY 2027** | **Cost To Complete** | **Total Cost** |
| Total Program Element | 1,253.341 | 123.447 | 136.593 | 141.138 | - | 141.138 | 162.664 | 122.874 | 94.157 | 97.451 | Continuing | Continuing |
| 0556: *EW Counter Response* | 561.171 | 39.406 | 21.671 | 21.886 | - | 21.886 | 21.974 | 20.304 | 47.208 | 47.908 | Continuing | Continuing |
| 1742: *EW Technical Development and T&E* | 8.869 | 1.551 | 1.638 | 1.732 | - | 1.732 | 1.772 | 1.804 | 1.836 | 1.867 | Continuing | Continuing |
| 2175: *Tactical Air Electronic Warfare* | 593.019 | 52.790 | 69.509 | 51.808 | - | 51.808 | 65.512 | 20.393 | 0.000 | 0.000 | 0.000 | 853.031 |
| 3308: *Technology Development* | 14.575 | 7.269 | 8.354 | 13.533 | - | 13.533 | 20.433 | 27.876 | 19.602 | 21.557 | Continuing | Continuing |
| 3309: *Assault Survivability Optimization* | 12.061 | 0.796 | 23.395 | 37.058 | - | 37.058 | 38.229 | 37.450 | 10.160 | 10.263 | Continuing | Continuing |
| 3327: *MAGTF EW Aviation Development* | 59.601 | 9.846 | 12.026 | 15.121 | - | 15.121 | 14.744 | 15.047 | 15.351 | 15.856 | Continuing | Continuing |
| 3371: *MAGTF EW Interoperability Development* | 4.045 | 1.170 | 0.000 | 0.000 | - | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 5.215 |
| 9999: *Congressional Adds* | 0.000 | 10.619 | 0.000 | 0.000 | - | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 10.619 |

**Program MDAP/MAIS Code:**
**Project MDAP/MAIS Code(s):** 418

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

This program element includes development of Electronic Warfare (EW) systems for the United States Navy (USN), United States Marine Corps (USMC), and United States Army tactical aircraft, USMC helicopters, surface combatants, data link vulnerability assessments, precision targeting, USN and USMC radio frequency jammers, and development and testing of electronic warfare devices for emerging threats and emergency contingencies. This element also includes: development of hardware/ software solutions that link on-board integrated Aircraft Survivability Equipment (iASE) that are compatible with mission planning information and systems; studies, analysis and evaluations of current and future aircraft threats and Advanced EW Suite capabilities; modeling and simulation for improved countermeasure capabilities, and development and testing to address new and emerging threats. The projects in this element improve the ability of the Joint Force to strike diverse targets inside adversary air and missile defense networks to destroy mobile power-projection platforms and enhance close combat lethality in complex terrain.
This program is funded under SYSTEM DEVELOPMENT AND DEMONSTRATION because it includes those projects that have passed Milestone B approval and are conducting engineering and manufacturing development tasks aimed at meeting validated requirement prior to full-rate production decision.

| Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Navy | Date: April 2022 |
|---|---|
| **Appropriation/Budget Activity**<br>1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)* | **R-1 Program Element (Number/Name)**<br>PE 0604270N *I Electronic Warfare (EW) Dev* |

| B. Program Change Summary ($ in Millions) | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total |
|---|---|---|---|---|---|
| Previous President's Budget | 127.718 | 139.535 | 0.000 | - | 0.000 |
| Current President's Budget | 123.447 | 136.593 | 141.138 | - | 141.138 |
| Total Adjustments | -4.271 | -2.942 | 141.138 | - | 141.138 |
| • Congressional General Reductions | - | - | | | |
| • Congressional Directed Reductions | - | -2.942 | | | |
| • Congressional Rescissions | - | - | | | |
| • Congressional Adds | - | - | | | |
| • Congressional Directed Transfers | - | - | | | |
| • Reprogrammings | -1.304 | 0.000 | | | |
| • SBIR/STTR Transfer | -2.968 | 0.000 | | | |
| • Program Adjustments | 0.000 | 0.000 | 0.000 | - | 0.000 |
| • Rate/Misc Adjustments | 0.001 | 0.000 | 0.000 | - | 0.000 |
| • Adjustments to Budget Year | - | - | 141.138 | - | 141.138 |

| Congressional Add Details ($ in Millions, and Includes General Reductions) | FY 2021 | FY 2022 |
|---|---|---|
| **Project:** 9999: *Congressional Adds* | | |
| Congressional Add: *Intrepid Tiger II* | 10.619 | 0.000 |
| Congressional Add Subtotals for Project: 9999 | 10.619 | 0.000 |
| Congressional Add Totals for all Projects | 10.619 | 0.000 |

**Change Summary Explanation**

Project Unit 2175 / Tactical Air Electronic Warfare: FY 2023 funding request was reduced by $12.524 million to account for the availability of prior year execution balances.

Project Unit 3308 / Technology Development: FY 2023 funding request was reduced by $.810 million to account for the availability of prior year execution balances.

Schedule:
Project Unit 2175 / Tactical Air Electronic Warfare: Incorporated F/A-18E/F Fleet Release 3QFY22 and F/18C through F/A-18F Fleet Release 1QFY23 due to established fleet release plan with Multi-Spectral Defense Electronic Warfare System Support Activity.
IDECM ARC Support for Development, Integration and Test continues through FY 2023. Dual Band Decoy (DBD) Support for Development, Integration and Test continues through FY 2023. FY22 Dual Band Decoy (DBD) EMD contract award moved from 1st Qtr. FY2022 to 3rd Qtr. FY2022 due to delays in contractor

| Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Navy | Date: April 2022 |
|---|---|
| **Appropriation/Budget Activity**<br>1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)* | **R-1 Program Element (Number/Name)**<br>PE 0604270N *I Electronic Warfare (EW) Dev* |

Demonstration of Technologies (DET) testing. DBD EMD Systems Development shifted to the right by two quarters and contract deliveries also shifted to the right by one quarter. DBD Early Operational Capability nomenclature changed to FY23 and FY24 Production Build.

Project Unit 3308 / Technology Development: FY20 Electronic Warfare (EW) Release changed from Q2 FY2021 to Q4 FY2021 due to Flight Test delays. Organic SWIP and ARC modeling, simulation, and technique optimization development will continue through FY 2023.

Project Unit 3309 / Assault Survivability Optimization: FY 2021 flight test funds re-aligned efforts to support acquisition milestones leading to FY 2022 Common Carriage EMD contract award. FY 2022 F/A-18 ground-to-air flight test changed from Q3 FY 2022 to Q4 FY 2022 due to aircraft and range availability. FY 2022 EMD award (via Other Transaction Authority) changed from Q1 FY 2022 to Q3 FY 2022 due to additional time required to release request for white papers and vendor submittal. Vendor selection completed in Q2 FY 2022. Engineering and logistics milestones updated to align with EMD date change.

Technical:
Project Unit 2175 / Tactical Air Electronic Warfare: FY22 plan updated with list of EMD test assets to provide additional detail and clarification.
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FY 2023 funding increase reflects the fact that the FY 2022 President’s Budget request did not include out-year funding.

| Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy | | | Date: April 2022 |
|---|---|---|---|
| Appropriation/Budget Activity<br>1319 / 5 | R-1 Program Element (Number/Name)<br>PE 0604270N / *Electronic Warfare (EW) Dev* | Project (Number/Name)<br>0556 / *EW Counter Response* | |

| COST ($ in Millions) | Prior Years | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total | FY 2024 | FY 2025 | FY 2026 | FY 2027 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0556: *EW Counter Response* | 561.171 | 39.406 | 21.671 | 21.886 | - | 21.886 | 21.974 | 20.304 | 47.208 | 47.908 | Continuing | Continuing |
| Quantity of RDT&E Articles | | - | - | - | - | - | - | - | - | - | | |

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

The Jammer Techniques Optimization (JATO) organization produces the jamming techniques and Electronic Attack (EA) optimization algorithms that are critical for current and future Airborne Electronic Attack (AEA) systems of the United States Navy (USN) and United States Marine Corps (USMC) to execute the evolving AEA mission. Through Modeling & Simulation (M&S), laboratory testing, and field testing, JATO optimizes parameters for existing EA systems (such as AN/ALQ-99 Tactical Jamming System (TJS) and the AN/ALQ-231(V) Intrepid Tiger II Family of Systems) to best counter existing threats, and applies that knowledge to define the requirements for follow-on AEA systems such as the Next Generation Jammer Mid-Band (NGJ-MB) and Next Generation Jammer Low Band (NGJ-LB) programs. As commercial and military Radio Frequency (RF) threats evolve and proliferate, the JATO organization provides updated tactics, techniques, and procedures to maximize the potency of USN and USMC AEA in meeting the Combatant Command (COCOM) Commanders' Electronic Warfare (EW) priorities, to include highly contested environments, Force Protection, Information Operations, and enhanced communications jamming. (Classified discussion available upon request).

JATO's Advanced Techniques Group (ATG) focuses specifically on electronic countermeasures to advanced threat weapon systems and Command, Control, and Communications (C3) networks that are challenging existing EA approaches, and how to best apply advances in geolocation and unknown threat characterization to EA responses. Additional efforts include risk reduction activities to evaluate and minimize EA interference with US weapons systems, and research/technology studies in support of upgrades to existing AEA systems such as the AN/ALQ-99 TJS.

The EW Advanced Capability Development (ACD) project focuses on increasing the Department of the Navy's understanding and utilization of rapidly-evolving technologies that operate in the Electromagnetic spectrum. As commercial and military Radio Frequency (RF) threats evolve and proliferate, this project tracks the relevant technology, intelligence, and tactics to maximize the potency of USN and USMC AEA through the rapid insertion of emergent technologies into existing AEA weapon systems and aircraft platforms.

The Special Capability Pod (SCP) project leverages existing Navy and Joint Service investments and focuses on continued development, test and evaluation of SCPs for highly flexible Electronic Warfare (EW) on USN EA-18G aircraft. Initial efforts to develop Navy pod variants were funded by the Air Force in FY18 as an OSD initiative. The SCPs will be specifically designed to address EW capability gaps and counter emerging electronic threats. As an iterative program, the highly modular interior design of the SCPs allows them to be integrated with current technology and upgraded electronics to provide the USN a rapidly adaptable solution against highly specialized and continuously evolving threats. (Classified discussion available upon request.)

The Electromagnetic Maneuver Warfare (EMW) Resource Allocation Management (RAM) project develops a software application to interface with the display in the cockpit of the EA-18G. The software application will provide the aircrew with smart decision aids in flight to enhance EW capability and survivability, optimized flight profiles, and jamming effectiveness in highly contested environments. EMW RAM efforts are being conducted as a collaborative project with Australia under the Airborne Multi-Platform Electronic Warfare Project Arrangement.

| Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>0556 / *EW Counter Response* |

The Next Generation Jammer (NGJ) follow-on software development project is required for the development, integration and testing of the NGJ capability within future EA-18G Software Configuration Set (SCS) H build software loads, as well as any potential future aircraft. The project will develop and incorporate incremental capability upgrades to ensure NGJ continues to address Airborne Electronic Attack (AEA) capability gaps against increasingly advanced enemy threats throughout the electromagnetic spectrum.

| B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each) | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total |
|---|---|---|---|---|---|
| ***Title:*** Jammer Techniques Optimization (JATO) | 15.794 | 17.172 | 17.515 | 0.000 | 17.515 |
| ***Articles:*** | - | - | - | - | - |
| ***FY 2022 Plans:***<br>The JATO organization will continue engineering development and test support of existing and emerging systems such as, but not limited to, the EA-18G, AN/ALQ-249 (NGJ-MB) and Next Generation Jammer Low Band (NGJ-LB) to address potential RF and Cyber/EW effects on current and evolving radar/communications threats. JATO will continue to generate tactics, techniques, and procedures to optimize the capabilities of systems such as, but not limited to, the AN/ALQ-99, ALQ-218, ALQ-227, AN/ALQ-231(V), and Unmanned Aerial Systems (UAS) payloads. JATO continues to meet COCOM Commanders' EW priorities including support for Overseas Contingency Operations and Force Protection. (Classified discussion available upon request). | | | | | |
| ***FY 2023 Base Plans:***<br>The JATO organization will continue engineering development and test support of existing and emerging systems such as, but not limited to, the EA-18G, AN/ALQ-249 (NGJ-MB) and Next Generation Jammer Low Band (NGJ-LB) to address potential RF and Cyber/EW effects on current and evolving radar/communications threats. JATO will continue to generate tactics, techniques, and procedures to optimize the capabilities of systems such as, but not limited to, the AN/ALQ-99, ALQ-218, ALQ-227, AN/ALQ-231(V), SCP, MALD-N, JSF and UAS payloads. JATO continues to meet COCOM Commanders' EW priorities including support for Overseas Contingency Operations and Force Protection. (Classified discussion available upon request). | | | | | |
| ***FY 2023 OCO Plans:***<br>N/A | | | | | |
| ***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>Funding increases from FY 2022 to FY 2023 due to inflation. | | | | | |
| ***Title:*** Electronic Warfare (EW) Advanced Development | 4.053 | 4.239 | 4.371 | 0.000 | 4.371 |
| ***Articles:*** | - | - | - | - | - |
| ***FY 2022 Plans:*** | | | | | |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>0556 / *EW Counter Response* |

| B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each) | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total |
|---|---|---|---|---|---|
| Efforts in FY 2022 include initial hardware and software prototyping, engineering, and multi-system effects characterization for capabilities into systems including, but not limited to, the AN/ALQ-99, AN/ALQ-231, AN/ALQ-249, NGJ-LB, Intrepid Tiger II, MALD-N and Special Capability/SPIN Pods payloads to address existing capability gaps on COCOM Integrated Priority Lists. FY 2022 funding supports research, development, integration and test and evaluation of advanced technologies into current, and future, Airborne Electronic Attack (AEA) weapons systems in laboratory and operational environments. (Classified discussion available upon request).<br>***FY 2023 Base Plans:***<br>Efforts in FY 2023 include initial hardware and software prototyping, engineering, and multi-system effects characterization for capabilities into systems including, but not limited to, the AN/ALQ-99, AN/ALQ-231, AN/ALQ-249, NGJ-LB, Intrepid Tiger II, MALD-N and Special Capability/SPIN Pods payloads to address existing capability gaps on COCOM Integrated Priority Lists. FY 2023 funding supports research, development, integration and test and evaluation of advanced technologies into current, and future, AEA weapons systems in laboratory and operational environments. (Classified discussion available upon request).<br>***FY 2023 OCO Plans:***<br>N/A<br>***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>Funding increases from FY 2022 to FY 2023 due to inflation. | | | | | |
| ***Title:*** Special Capability Pod (SCP)<br>***Articles:***<br>***Description:*** The Special Capability Pods (SCPs) project leverages other ongoing Navy and Joint Service investments and focuses on continued development, test and evaluation of rapidly repurposable pods for highly flexible Airborne Electronic Attack capability.<br>***FY 2022 Plans:***<br>FY 2022 efforts include completion of test activities and the analysis of alternate SCP payloads to address a limited contingency capability for COCOM Commanders. (Classified discussion available upon request.)<br>***FY 2023 Base Plans:***<br>N/A<br>***FY 2023 OCO Plans:*** | 18.919<br>- | 0.120<br>- | 0.000<br>- | 0.000<br>- | 0.000<br>- |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>0556 / *EW Counter Response* |

| B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each) | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total |
|---|---|---|---|---|---|
| N/A<br>***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>Funding decreases from FY 2022 to FY 2023 as SCP effort completes in FY 2022. | | | | | |
| ***Title:*** Electromagnetic Manuever Warfare (EMW) Resource Allocation Manager (RAM)<br>***Articles:***<br>***Description:*** The Department of Navy is developing dynamic Electromagnetic Maneuver Warfare (EMW) Resource Allocation Management (RAM) applications to increase operators effectiveness in the Electromagnetic Spectrum (ES).<br>***FY 2022 Plans:***<br>Complete development of EMW RAM architecture framework. Consolidate and analyze data collected during algorithm demonstration. Initial implementation of the EMW RAM platform agnostic algorithms into specific aircraft systems and sub-systems or designated surrogate hardware.<br>***FY 2023 Base Plans:***<br>N/A<br>***FY 2023 OCO Plans:***<br>N/A<br>***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>Funding decreases from FY 2022 to FY 2023 as EMW RAM architecture framework effort completes in FY 2022. | 0.640<br>- | 0.140<br>- | 0.000<br>- | 0.000<br>- | 0.000<br>- |
| **Accomplishments/Planned Programs Subtotals** | 39.406 | 21.671 | 21.886 | 0.000 | 21.886 |

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

| Line Item | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total | FY 2024 | FY 2025 | FY 2026 | FY 2027 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|
| • APN/0513: *AEA Systems* | 21.061 | 20.221 | 25.058 | - | 25.058 | 23.960 | 19.542 | 18.541 | 18.882 | 73.055 | 659.496 |

**Remarks**

**D. Acquisition Strategy**

The JATO organization, comprised of a partnership between the Government and several University Affiliated Research Centers, continues to research EW tactics and techniques. The JATO prime delivery order, a cost plus fixed fee contract, was awarded to Johns Hopkins University.

| Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>0556 / *EW Counter Response* |

The EW ACD project will investigate developmental and existing technologies from commercial and governmental sources for integration into current and emerging USN and USMC EW weapon systems and aircraft. These technologies, once demonstrated to have sufficient maturity, will transition into the applicable acquisition programs. Additionally, the project will pursue technology development and demonstration through rapid acquisition or Speed to Fleet initiatives to the greatest extent possible.

The Special Capability Pod (SCP) project leverages existing Navy and Joint Service investments and focuses on continued development, test and evaluation of SCPs for highly flexible Electronic Warfare (EW) on USN EA-18G aircraft. Initial efforts to develop Navy pod variants were funded by the Air Force in FY18 as an OSD initiative. The SCPs will be specifically designed to address EW capability gaps and counter emerging electronic threats. As an iterative program, the highly modular interior design of the SCPs allows them to be integrated with current technology and upgraded electronics to provide the USN a rapidly adaptable solution against highly specialized and continuously evolving threats. (Classified discussion available upon request.)

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy | | | Date: April 2022 |
|---|---|---|---|
| Appropriation/Budget Activity<br>1319 / 5 | R-1 Program Element (Number/Name)<br>PE 0604270N / *Electronic Warfare (EW) Dev* | Project (Number/Name)<br>0556 / *EW Counter Response* | |

**Product Development ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Primary HDW Development - SCP | MIPR | Air Force Research Lab : Ohio | 0.000 | 1.529 | May 2021 | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 1.529 | - |
| Primary HDW Development - SCP | WR | NAWCAD : Patuxent River, MD | 0.000 | 4.590 | May 2021 | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 4.590 | - |
| Systems Engineering | WR | Naval Research Lab : Maryland | 19.683 | 1.835 | Nov 2020 | 1.872 | Nov 2021 | 1.909 | Nov 2022 | - | | 1.909 | Continuing | Continuing | Continuing |
| Systems Engineering | WR | NAWCAD : Patuxent River, MD | 36.695 | 6.751 | Nov 2020 | 0.766 | Nov 2021 | 0.720 | Nov 2022 | - | | 0.720 | Continuing | Continuing | Continuing |
| Systems Engineering | WR | NAWCWD : Point Mugu, CA | 104.508 | 5.225 | Nov 2020 | 6.170 | Nov 2021 | 6.293 | Nov 2022 | - | | 6.293 | Continuing | Continuing | Continuing |
| Systems Engineering | WR | NAWCWD : China Lake, CA | 3.491 | 4.099 | Nov 2020 | 0.140 | Nov 2021 | 0.000 | | - | | 0.000 | Continuing | Continuing | Continuing |
| Systems Engineering | WR | NSWC Det : Crane, IN | 13.198 | 1.870 | Nov 2020 | 1.175 | Nov 2021 | 1.199 | Nov 2022 | - | | 1.199 | Continuing | Continuing | Continuing |
| Systems Engineering | Various | Various : Various | 16.588 | 0.330 | Nov 2020 | 0.117 | Nov 2021 | 0.119 | Nov 2022 | - | | 0.119 | Continuing | Continuing | Continuing |
| Prior Year Development cost no longer Funded in the FYDP | Various | Various : Various | 263.147 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 263.147 | - |
| | | **Subtotal** | 457.310 | 26.229 | | 10.240 | | 10.240 | | - | | 10.240 | Continuing | Continuing | N/A |

**Support ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Development Support - Jammer Techniques Optimization (JATO) | SS/CPFF | Johns Hopkins Unv : Maryland | 57.262 | 3.545 | Dec 2020 | 3.900 | Dec 2021 | 3.978 | Dec 2022 | - | | 3.978 | Continuing | Continuing | Continuing |
| Development Support - EW Advanced Development | SS/CPFF | Johns Hopkins Unv : Maryland | 0.400 | 0.350 | Dec 2020 | 0.357 | Dec 2021 | 0.364 | Dec 2022 | - | | 0.364 | Continuing | Continuing | Continuing |

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>0556 / *EW Counter Response* |

**Support ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Development Support - EW Advanced Development | SS/CPFF | GTRI : Atlanta, GA | 2.118 | 0.823 | Dec 2020 | 1.000 | Dec 2021 | 1.067 | Dec 2022 | - | | 1.067 | Continuing | Continuing | Continuing |
| Eng & Tech Srvc (Non FFRDC) | Various | Various : Various | 23.561 | 2.486 | Dec 2020 | 2.898 | Dec 2021 | 2.956 | Dec 2022 | - | | 2.956 | Continuing | Continuing | Continuing |
| Eng & Tech Srvc (FFRDC) | Various | Various : Various | 1.350 | 0.632 | Dec 2020 | 0.645 | Dec 2021 | 0.658 | Dec 2022 | - | | 0.658 | Continuing | Continuing | Continuing |
| Prior year Support costs no longer funded in the FYDP | Various | Various : Various | 3.630 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 3.630 | - |
| | | **Subtotal** | 88.321 | 7.836 | | 8.800 | | 9.023 | | - | | 9.023 | Continuing | Continuing | N/A |

**Remarks**

Funding increases from FY 2022 to FY 2023 due to inflation.

**Test and Evaluation ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| JATO Flight Test | WR | NAWCWD : Point Mugu, CA | 5.112 | 0.828 | Nov 2020 | 0.845 | Nov 2021 | 0.861 | Nov 2022 | - | | 0.861 | Continuing | Continuing | Continuing |
| JATO Ground/Lab Test | WR | NAWCWD : Point Mugu, CA | 6.168 | 1.682 | Nov 2020 | 1.715 | Nov 2021 | 1.750 | Nov 2022 | - | | 1.750 | Continuing | Continuing | Continuing |
| SCP Test | WR | Various : Various | 1.443 | 2.810 | Nov 2020 | 0.060 | Nov 2021 | 0.000 | | - | | 0.000 | Continuing | Continuing | Continuing |
| Prior year Test and Evaluation costs no longer funded in the FYDP | Various | Various : Various | 0.925 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 0.925 | - |
| | | **Subtotal** | 13.648 | 5.320 | | 2.620 | | 2.611 | | - | | 2.611 | Continuing | Continuing | N/A |

**Remarks**

Funding decreases from FY 2022 to FY 2023 due final SCP test events completing in FY 2022.

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>0556 / *EW Counter Response* |

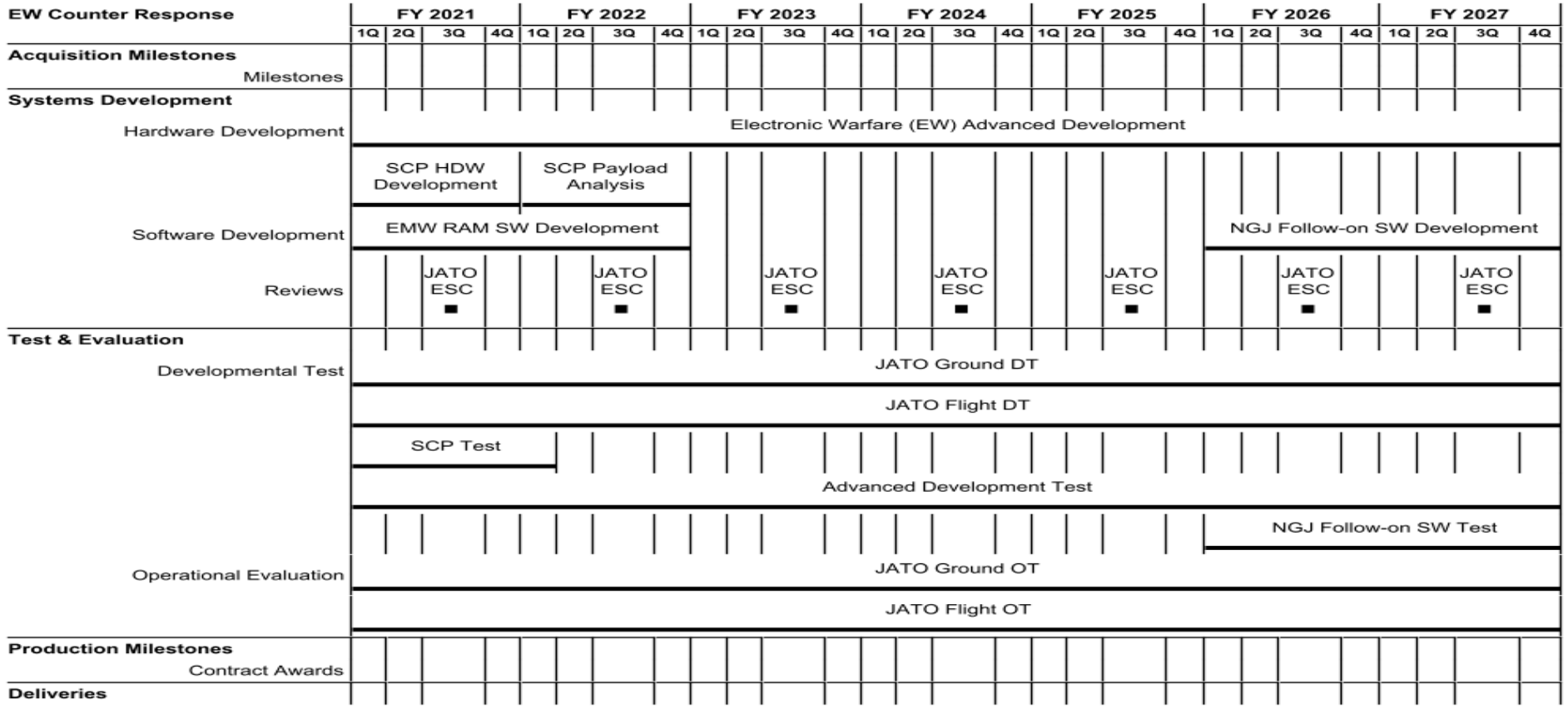
**Management Services ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Program Management Support | WR | Various : Various | 1.348 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | Continuing | Continuing | Continuing |
| Travel | WR | Various : Various | 0.544 | 0.021 | Oct 2020 | 0.011 | Oct 2021 | 0.012 | Oct 2022 | - | | 0.012 | Continuing | Continuing | Continuing |
| | | **Subtotal** | 1.892 | 0.021 | | 0.011 | | 0.012 | | - | | 0.012 | Continuing | Continuing | N/A |

| | Prior Years | FY 2021 | | FY 2022 | | FY 2023 Base | | FY 2023 OCO | | FY 2023 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Project Cost Totals** | 561.171 | 39.406 | | 21.671 | | 21.886 | | - | | 21.886 | Continuing | Continuing | N/A |

**Remarks**

| Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>0556 / *EW Counter Response* |




*2023DON - 0604270N - 0556*

| Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>0556 / *EW Counter Response* |

## Schedule Details

| | Start | | End | |
|---|---|---|---|---|
| **Events by Sub Project** | **Quarter** | **Year** | **Quarter** | **Year** |
| ***EW Counter Response*** | | | | |
| Systems Development: Hardware Development: Electronic Warfare (EW) Advanced Development | 1 | 2021 | 4 | 2027 |
| Systems Development: Hardware Development: Special Capability Pod (SCP) Hardware Development | 1 | 2021 | 4 | 2021 |
| Systems Development: Hardware Development: Special Capability Pod (SCP) Payload Analysis | 1 | 2022 | 4 | 2022 |
| Systems Development: Software Development: Electromagnetic Manuever Warfare (EMW) Resource Allocation Manager (RAM) Development | 1 | 2021 | 4 | 2022 |
| Systems Development: Software Development: Next Generation Jammer Follow-On Software Development | 1 | 2026 | 4 | 2027 |
| Systems Development: Reviews: JATO Executive Steering Committee 2021 | 3 | 2021 | 3 | 2021 |
| Systems Development: Reviews: JATO Executive Steering Committee 2022 | 3 | 2022 | 3 | 2022 |
| Systems Development: Reviews: JATO Executive Steering Committee 2023 | 3 | 2023 | 3 | 2023 |
| Systems Development: Reviews: JATO Executive Steering Committee 2024 | 3 | 2024 | 3 | 2024 |
| Systems Development: Reviews: JATO Executive Steering Committee 2025 | 3 | 2025 | 3 | 2025 |
| Systems Development: Reviews: JATO Executive Steering Committee 2026 | 3 | 2026 | 3 | 2026 |
| Systems Development: Reviews: JATO Executive Steering Committee 2027 | 3 | 2027 | 3 | 2027 |
| Test & Evaluation: Developmental Test: JATO Ground Developmental Test | 1 | 2021 | 4 | 2027 |
| Test & Evaluation: Developmental Test: JATO Flight Developmental Test | 1 | 2021 | 4 | 2027 |
| Test & Evaluation: Developmental Test: SCP Test | 1 | 2021 | 1 | 2022 |
| Test & Evaluation: Developmental Test: Advanced Development Test | 1 | 2021 | 4 | 2027 |
| Test & Evaluation: Developmental Test: Next Generation Jammer Follow-on SW Test | 1 | 2026 | 4 | 2027 |

| Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>0556 / *EW Counter Response* |

| | Start | | End | |
|---|---|---|---|---|
| **Events by Sub Project** | **Quarter** | **Year** | **Quarter** | **Year** |
| Test & Evaluation: Operational Evaluation: JATO Ground Operational Test | 1 | 2021 | 4 | 2027 |
| Test & Evaluation: Operational Evaluation: JATO Flight Operational Test | 1 | 2021 | 4 | 2027 |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy | | | | | | | | | | Date: April 2022 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Appropriation/Budget Activity<br>1319 / 5 | | | | | R-1 Program Element (Number/Name)<br>PE 0604270N / *Electronic Warfare (EW) Dev* | | | | Project (Number/Name)<br>1742 / *EW Technical Development and T&E* | | | |
| **COST ($ in Millions)** | **Prior Years** | **FY 2021** | **FY 2022** | **FY 2023 Base** | **FY 2023 OCO** | **FY 2023 Total** | **FY 2024** | **FY 2025** | **FY 2026** | **FY 2027** | **Cost To Complete** | **Total Cost** |
| 1742: *EW Technical Development and T&E* | 8.869 | 1.551 | 1.638 | 1.732 | - | 1.732 | 1.772 | 1.804 | 1.836 | 1.867 | Continuing | Continuing |
| Quantity of RDT&E Articles | | - | - | - | - | - | - | - | - | - | | |

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

Provide for quick reaction prototyping of tactical information and electronic warfare systems to counter adversary platforms and C5ISRT (command and control, communications, computers, cyber, intelligence, surveillance, reconnaissance, and targeting). Systems address various requirements across multiple platforms (air, surface, and subsurface), airborne and surface cryptologic operational requirements, and joint missions to research, assess, and develop information warfare and electronic warfare systems and capabilities. (Details held at a higher classification).

| B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each) | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total |
|---|---|---|---|---|---|
| ***Title:*** Electronic Warfare Technical Development and Test & Evaluation | 1.551 | 1.638 | 1.732 | 0.000 | 1.732 |
| ***Articles:*** | - | - | - | - | - |
| ***FY 2022 Plans:***<br>*Based on study, determined feasibility for a countermeasure capability to support COCOM directed requirements. (Details held at a higher classification, beyond GENSER).<br>* Developed toolkits for Cyber offensive capabilities. (Details held at a higher classification, beyond GENSER).<br>* Conducted countermeasure research against adversary C2 (Details held at a higher classification, beyond GENSER). | | | | | |
| ***FY 2023 Base Plans:***<br>*Perform technology maturation and risk reduction on Cyber and Electronic Warfare countermeasures.<br>*Develop increased understanding of new and emerging technology to improve countermeasure development and capability readiness. | | | | | |
| ***FY 2023 OCO Plans:***<br>N/A | | | | | |
| ***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>FY23 $0.039M increase supports Electronic Warfare Technical Development and develop additional toolkits for Cyber offensive capabilities (Details held at a higher classification, beyond GENSER). | | | | | |
| **Accomplishments/Planned Programs Subtotals** | 1.551 | 1.638 | 1.732 | 0.000 | 1.732 |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>1742 / *EW Technical Development and T&E* |

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

N/A

**Remarks**

**D. Acquisition Strategy**

Development of classified prototypes and special capabilities. The Navy is granted streamlined acquisition authority for the development of classified prototypes and special capabilities under the Deputy Assistant Secretary of the Navy (DASN) Information Warfare.

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy | | | Date: April 2022 |
|---|---|---|---|
| Appropriation/Budget Activity<br>1319 / 5 | R-1 Program Element (Number/Name)<br>PE 0604270N / *Electronic Warfare (EW) Dev* | Project (Number/Name)<br>1742 / *EW Technical Development and T&E* | |

**Product Development ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Development(1) | C/FP | Classified : Classified | 6.659 | 1.551 | Oct 2020 | 1.638 | Oct 2021 | 1.732 | Nov 2022 | - | | 1.732 | Continuing | Continuing | Continuing |
| | | **Subtotal** | 6.659 | 1.551 | | 1.638 | | 1.732 | | - | | 1.732 | Continuing | Continuing | N/A |

**Remarks**

1-Due to classification category, may not be on GENSER classified exhibits.

**Support ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Development Support | WR | NAVSEA : Maryland | 0.600 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 0.600 | - |
| Studies & Analysis(1) | C/CPFF | Classified : Classified | 0.653 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 0.653 | - |
| | | **Subtotal** | 1.253 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 1.253 | N/A |

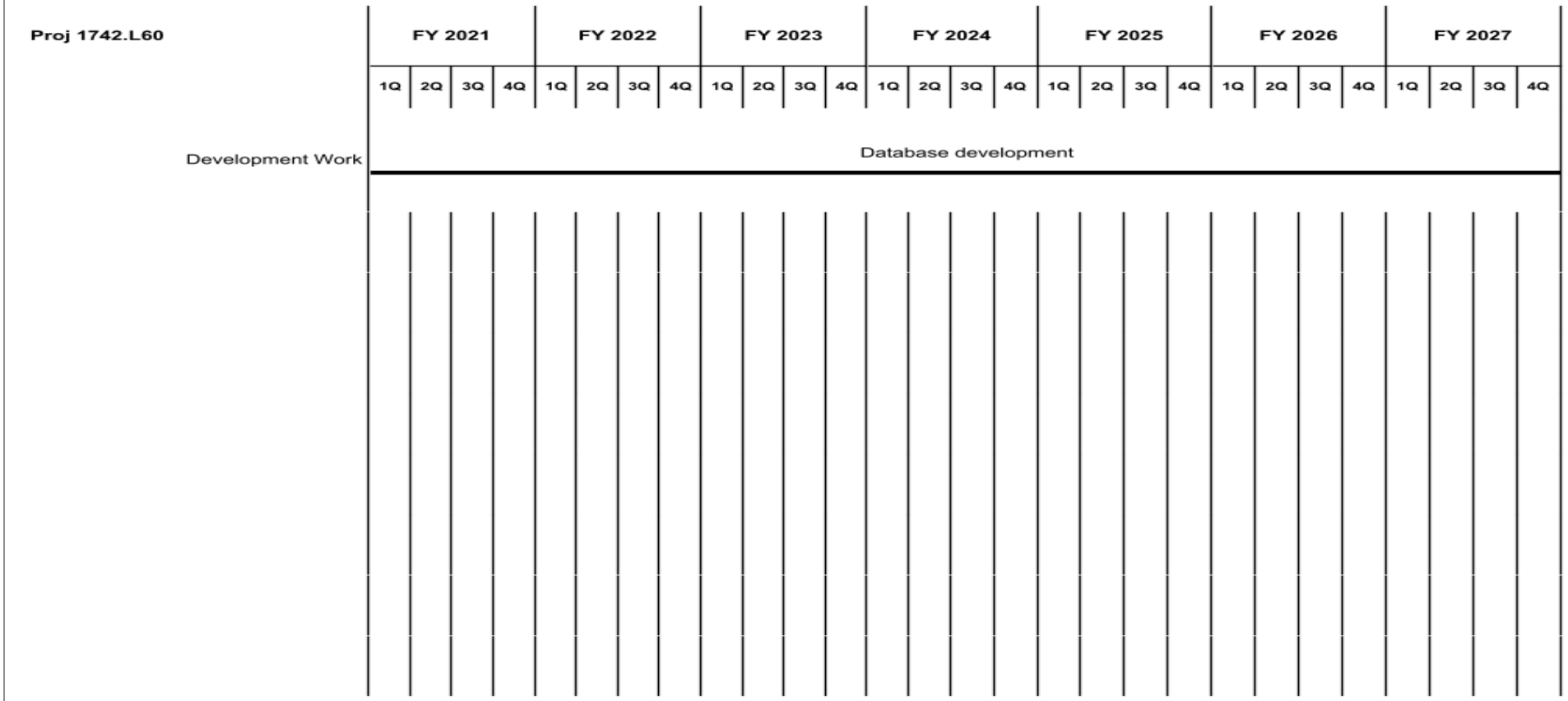
**Test and Evaluation ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mod & Sim | C/CPFF | Classified : Classified | 0.957 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | Continuing | Continuing | Continuing |
| | | **Subtotal** | 0.957 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | Continuing | Continuing | N/A |

| | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Project Cost Totals** | 8.869 | 1.551 | | 1.638 | | 1.732 | | - | | 1.732 | Continuing | Continuing | N/A |

**Remarks**

| Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>1742 / *EW Technical Development and T&E* |




2023DON - 0604270N - 1742.L60

| Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>1742 / *EW Technical Development and T&E* |

## Schedule Details

| | Start | | End | |
|---|---|---|---|---|
| **Events by Sub Project** | **Quarter** | **Year** | **Quarter** | **Year** |
| ***Proj 1742.L60*** | | | | |
| Development Work: Database development | 1 | 2021 | 4 | 2027 |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy | | | | | | | | | | | Date: April 2022 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Appropriation/Budget Activity<br>1319 / 5 | | | | | R-1 Program Element (Number/Name)<br>PE 0604270N / *Electronic Warfare (EW) Dev* | | | | Project (Number/Name)<br>2175 / *Tactical Air Electronic Warfare* | | | |
| **COST ($ in Millions)** | **Prior Years** | **FY 2021** | **FY 2022** | **FY 2023 Base** | **FY 2023 OCO** | **FY 2023 Total** | **FY 2024** | **FY 2025** | **FY 2026** | **FY 2027** | **Cost To Complete** | **Total Cost** |
| 2175: *Tactical Air Electronic Warfare* | 593.019 | 52.790 | 69.509 | 51.808 | - | 51.808 | 65.512 | 20.393 | 0.000 | 0.000 | 0.000 | 853.031 |
| Quantity of RDT&E Articles | | - | - | - | - | - | - | - | - | - | | |

**Project MDAP/MAIS Code:** 418

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

Integrated Defensive Electronic Countermeasures (IDECM) Block 4 (IB-4) is an Engineering Change Proposal (ECP) to the ALQ-214 to render it suitable for operation on F/A-18C/D aircraft (replacing the ALQ-126B and significantly improving F/A-18C/D survivability) while retaining all IDECM suite functionality when installed on F/A-18E/F aircraft. The IB-4 acquisition and contract strategy includes development of the Common On-Board Jammer for the F/A-18 C/D/E/F aircraft through sole source contract awards for modifications to the ALQ-214. IB-4, ALQ-214 ECP efforts include hardware and software design, development, integration and testing on the host aircraft. The F/A-18 EW suite includes the ALR-67 Radar Warning Receiver (RWR), the ALE-47 Countermeasures Dispensing Set (CMDS), the mission computer and other avionics.

ALQ-214 software improvement will provide the ALQ-214 with Digital Radio Frequency Memory (DRFM) technique capability significantly improving F/A18C/D/E/F survivability. Acquisition and contract strategy includes development, integration and test of the ALQ-214 software improvements through sole-source contract award. Modifications to other F/A-18E/F Block II and Block III aircraft avionics may be required in order to develop and integrate this capability. These other avionics may include, but are not limited to, the ALR-67(V)2, ALR-67(V)3, ALE-47, ALE-50 Advanced Airborne Expendable Decoy (AAED), ALE-55 Fiber Optic Towed Decoy (FOTD), mission computer and fire control radar.

F/A-18 E/F ALQ-214 Adaptive Radar Countermeasures (ARC) will provide the ALQ-214A(V)4/5 with improved Radio Frequency (RF) threat detection algorithms and jamming against modern threat radars. Modifications to other F/A-18C/D/E/F Block II and Block III aircraft avionics may be required in order to develop and integrate this capability. These other avionics may include, but are not limited to, the ALR-67(V)3, ALE-47, ALE-50 AAED, ALE-55 FOTD, mission computer and fire control radar. ARC capabilities may be integrated into other DoD platforms with radar warning receivers or countermeasures systems.

The Dual Band Decoy (DBD) will provide expanded RF capability against current and emerging modern RF threat radars, significantly improving the survivability of the F/A-18 E/F and may be further developed and integrated into other Naval platforms. DBD will leverage Science and Technology (S&T) advancements through the Dual Band Intelligent RF Expendable (DIRE) program to accelerate DBD capability development. DBD will replace the current ALE-55 FOTD beginning with fielding of an Initial Operational Capability in FY 2025. Modifications to other F/A-18E/F Block II and Block III aircraft avionics may be required in order to develop and integrate this capability. These other avionics may include, but are not limited to, the ALR-67(V)2, ALR-67(V)3, ALE-47, ALE-50 AAED, ALE-55 FOTD, mission computer and fire control radar.

| Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>2175 / *Tactical Air Electronic Warfare* |

This Project also includes/enables integrated Aircraft Survivability Equipment (iASE) which improves situational awareness for own-ship, wingman, and distributed command and control.

| B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each) | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total |
|---|---|---|---|---|---|
| ***Title:*** Tactical Air EW | 52.790 | 69.509 | 51.808 | 0.000 | 51.808 |
| ***Articles:*** | - | 66 | - | - | - |
| ***FY 2022 Plans:***<br>FY 22 - IOC incremental releases of ARC will commence in FY 2022. FY22 IDECM ARC Development, Integration and Test will continue. Dual Band Decoy (DBD) competitively awarded EMD phase including Development, Integration and Test will start in FY 2022. Dual Band Intelligent RF Expendable (DIRE) program encompasses the design, fabrication, lab and flight testing of an integrated dual band RF countermeasure. Breakdown of test assets follows:<br>High Voltage Fiber Optic Mass Model (HVFOMM) - 27<br>DBD Brass Board Assembly - 1<br>DBD Round Assembly - 5<br>DBD All Up Round (AUR) Assembly - 33 | | | | | |
| ***FY 2023 Base Plans:***<br>FY23 - IDECM ARC Development, Integration and Test will continue through FY 2023. Dual Band Decoy (DBD) competitively awarded EMD phase including Development, Integration and Test will continue in FY 2023. | | | | | |
| ***FY 2023 OCO Plans:***<br>N/A | | | | | |
| ***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>Decrease of $5.177M from FY 2022 to FY 2023 is due to re-phasing for ARC Spiral 2 Development. FY 2023 funding request was reduced by $12.524 million to account for the availability of prior year execution balances. | | | | | |
| **Accomplishments/Planned Programs Subtotals** | 52.790 | 69.509 | 51.808 | 0.000 | 51.808 |

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

| Line Item | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total | FY 2024 | FY 2025 | FY 2026 | FY 2027 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|
| • APN/0576 004-12: *Common On-Board Jammer* | 49.343 | 25.479 | 53.433 | - | 53.433 | 36.948 | 10.979 | 10.815 | 5.194 | 0.000 | 790.898 |
| • PANMC/0182: *Air Expendable CM* | 0.000 | 0.000 | 20.153 | - | 20.153 | 39.386 | 40.190 | 48.416 | 49.386 | Continuing | Continuing |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>2175 / *Tactical Air Electronic Warfare* |

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

| Line Item | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total | FY 2024 | FY 2025 | FY 2026 | FY 2027 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|

**Remarks**

PANMC 0182 Air Countermeasures (CM) funding represents only a portion of the total PANMC 0182 Air Expendable CM Budget. Dual Band Decoy (DBD) initial procurements begin in FY 2023 to replace the ALE-55 Fiber Optic Towed Decoy (FOTD) whose last procurement was in FY 2020.

**D. Acquisition Strategy**

Mainline ARC Integration contract is a sole source contract awarded to Leidos 4th Qtr. FY 2020 and continuing through FY 2023. DBD development is planned as an evolutionary development approach with competitive prototyping phase which started in FY 2019 continuing through FY 2021, followed by a competitively awarded EMD phase starting in FY 2022 continuing into FY 2025.

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>2175 / *Tactical Air Electronic Warfare* |

**Product Development ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Adaptive Radar Countermeasures (ARC) Development | SS/CPFF | Leidos : Arlington, VA | 28.565 | 16.200 | Mar 2021 | 26.801 | Nov 2021 | 14.720 | Dec 2022 | - | | 14.720 | 19.125 | 105.411 | 105.411 |
| Adaptive Radar Countermeasures (ARC) Development | SS/FFP | L3Harris : Clifton, NJ | 1.844 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 1.844 | 1.844 |
| Dual Band Decoy Development | C/FFP | BAE : Nashua, NH | 24.000 | 11.227 | Nov 2020 | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 35.227 | 35.227 |
| Dual Band Decoy Development | C/FFP | Raytheon : Goleta, CA | 24.000 | 7.477 | Nov 2020 | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 31.477 | 31.477 |
| Dual Band Decoy Development EMD | C/FFP | TBD : TBD | 0.000 | 0.000 | | 28.170 | May 2022 | 14.248 | May 2023 | - | | 14.248 | 28.855 | 71.273 | 74.215 |
| Dual Band Decoy Development DIRE | C/CPFF | Qorvo : Richardson TX | 0.000 | 0.646 | Jul 2021 | 0.757 | Jul 2022 | 0.000 | | - | | 0.000 | 0.000 | 1.403 | 1.403 |
| Dual Band Decoy Development DIRE | C/CPFF | NG : Linthicum Heights MD | 0.000 | 0.541 | Jul 2021 | 0.758 | Jul 2022 | 0.000 | | - | | 0.000 | 0.000 | 1.299 | 1.299 |
| Prior Year Prod Dev costs no longer funded in FYDP | Various | Various : Various | 307.712 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 307.712 | - |
| | | **Subtotal** | 386.121 | 36.091 | | 56.486 | | 28.968 | | - | | 28.968 | 47.980 | 555.646 | N/A |

**Remarks**

IDECM ARC Support for Development, Integration and Test continues through FY 2023. Decrease of $12.081M from FY22 to FY23 in ARC development is due to less system requirement implementation in FY23. A DBD competitive EMD phase will start in FY22 ($28.170M) and decrease by $13.922M in FY23 due to test assets being procured in the first year and the shift of the Contract award from 1st Qtr. to 3rd Qtr. Decrease of $1.515M from FY22 to FY23 in Dual Band Intelligent RF Expendable (DIRE) is due to program beginning in FY 2021 and completing within 12 months of contract award.

**Support ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Integrated Log Supt- ARC | WR | NAWCAD : Pax River, MD | 0.057 | 0.212 | Nov 2020 | 0.107 | Nov 2021 | 0.108 | Nov 2022 | - | | 0.108 | 0.223 | 0.707 | - |

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy | | | Date: April 2022 |
|---|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>2175 / *Tactical Air Electronic Warfare* | |

**Support ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Software Dev-ALQ - 214 SW Dev | SS/CPFF | L3Harris : Clifton, NJ | 31.465 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 31.465 | 31.465 |
| Engineering Support | WR | Various : Various | 2.662 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 2.662 | - |
| Engineering Support ARC | WR | Various : Various | 2.997 | 1.669 | Nov 2020 | 2.191 | Nov 2021 | 2.528 | Nov 2022 | - | | 2.528 | 1.794 | 11.179 | - |
| Program Management Support ARC | WR | NAWCAD : Pax River, MD | 0.000 | 0.000 | | 0.884 | Nov 2021 | 0.893 | Nov 2022 | - | | 0.893 | 1.327 | 3.104 | - |
| Engineering Support Dual Band Decoy | WR | Various : Various | 3.207 | 2.969 | Nov 2020 | 1.979 | Nov 2021 | 1.990 | Nov 2022 | - | | 1.990 | 1.320 | 11.465 | - |
| Software Dev-ALQ - 214 SW Dev | C/CPFF | GTRI : Atlanta GA | 0.492 | 0.370 | Dec 2020 | 0.300 | Dec 2021 | 0.184 | Dec 2022 | - | | 0.184 | 0.000 | 1.346 | 1.346 |
| Prior Year Support costs no longer funded in FYDP | Various | Various : Various | 21.104 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 21.104 | - |
| | | **Subtotal** | 61.984 | 5.220 | | 5.461 | | 5.703 | | - | | 5.703 | 4.664 | 83.032 | N/A |

**Remarks**

IDECM ARC Support for Development, Integration and Test continues through FY 2023. Dual Band Decoy (DBD) Support for Development, Integration and Test continues through FY 2023. Increase in FY23 ARC efforts ($.346M) for additional oversight required to support additional Flight Testing. Increase in FY23 DBD efforts ($.011M) is due to escalation. Decrease in ALQ-214 Software Development ($.116M) due to prioritization of funding for other efforts.

**Test and Evaluation ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Integrated Test & Eval ALQ-214 SW Imp | WR | NAWCWD : China Lake, CA | 2.446 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 2.446 | - |
| Integrated Test & Eval ALQ-214 SW Imp | WR | NAWCWD : Point Mugu, CA | 0.282 | 0.800 | Nov 2020 | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 1.082 | - |
| Integrated Test & Eval ALQ-214 SW Imp C/D Aircraft | WR | NAWCWD : China Lake, CA | 0.000 | 2.876 | Dec 2020 | 1.124 | Nov 2021 | 0.000 | | - | | 0.000 | 0.000 | 4.000 | - |
| Oper Test & Eval IDECM | WR | NAWCWD : China Lake, CA | 2.737 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 2.737 | - |

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy | | | Date: April 2022 |
|---|---|---|---|
| Appropriation/Budget Activity<br>1319 / 5 | R-1 Program Element (Number/Name)<br>PE 0604270N / *Electronic Warfare (EW) Dev* | Project (Number/Name)<br>2175 / *Tactical Air Electronic Warfare* | |

**Test and Evaluation ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Eng & Tech Srvcs (Non-FFRDC) (VX-9) | SS/CPFF | Various : Various | 2.485 | 0.000 | | 0.000 | | 1.014 | Dec 2022 | - | | 1.014 | 0.000 | 3.499 | 3.499 |
| Eng Test & Eval ARC | WR | NAWCAD : Pax River, MD | 0.823 | 0.177 | Nov 2020 | 0.293 | Nov 2021 | 0.296 | Nov 2022 | - | | 0.296 | 0.619 | 2.208 | - |
| Eng Test & Eval DBD | WR | NAWCAD : Pax River, MD | 0.000 | 0.240 | Nov 2020 | 0.242 | Nov 2021 | 0.245 | Nov 2022 | - | | 0.245 | 0.000 | 0.727 | - |
| Dev Test & Eval Supt ARC | WR | NAWCWD : Point Mugu, CA | 0.152 | 1.202 | Nov 2020 | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 1.354 | - |
| Dev Test & Eval Supt ARC | WR | NAWCWD : China Lake, CA | 0.831 | 0.638 | Nov 2020 | 0.000 | | 0.000 | | - | | 0.000 | 2.500 | 3.969 | - |
| Integrated Test & Eval ARC | WR | NAWCWD : Point Mugu, CA | 0.000 | 0.000 | | 2.459 | Nov 2021 | 5.004 | Nov 2022 | - | | 5.004 | 0.000 | 7.463 | - |
| Integrated Test & Eval ARC | WR | NAWCWD : China Lake, CA | 0.000 | 0.000 | | 2.588 | Nov 2021 | 7.345 | Nov 2022 | - | | 7.345 | 0.000 | 9.933 | - |
| Oper Test & Eval ARC | WR | Various : Various | 0.000 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | 9.625 | 9.625 | - |
| Oper Test & Eval ARC (VX-9) | WR | NAWCWD : China Lake, CA | 0.000 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | 3.500 | 3.500 | - |
| Dev Test & Eval Supt Dual Band Decoy | WR | Various : Various | 1.250 | 5.492 | Nov 2020 | 0.800 | Nov 2021 | 3.177 | Nov 2022 | - | | 3.177 | 6.600 | 17.319 | - |
| Integrated Test & Eval Dual Band Decoy | WR | Various : Various | 0.000 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | 3.250 | 3.250 | - |
| Oper Test & Eval Dual Band Decoy | WR | Various : Various | 0.000 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | 7.051 | 7.051 | - |
| Oper Test & Eval DBD (VX-9) | WR | NAWCWD : China Lake, CA | 0.000 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 0.000 | - |
| Prior Year T&E costs no longer funded in FYDP | WR | Various : Various | 43.998 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 43.998 | - |
| | | **Subtotal** | 55.004 | 11.425 | | 7.506 | | 17.081 | | - | | 17.081 | 33.145 | 124.161 | N/A |

**Remarks**

IDECM ARC Support for Development, Integration and Test continues through FY 2023. Decrease in FY23 to ALQ-214 SWIP ($1.124M) is due to completion of the effort in FY22. Increase in FY23 to ARC T&E CSS support ($1.014M) as VX9 effort begins. Increase in FY23 to ARC and DBD engineering efforts at Pax River, MD ($.006) is due to escalation. Increase to FY23 ARC IT&E ($7.302M) at Point Mugu and China Lake is for Spiral 2 ARC Load. DBD DT&E testing decrease in FY22 is due to elimination of the

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy | | | Date: April 2022 |
|---|---|---|---|
| Appropriation/Budget Activity<br>1319 / 5 | R-1 Program Element (Number/Name)<br>PE 0604270N / *Electronic Warfare (EW) Dev* | Project (Number/Name)<br>2175 / *Tactical Air Electronic Warfare* | |

**Test and Evaluation ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Risk Reduction (RR) contracting effort. The elimination of RR delayed development and consequently delayed DT&E from FY22 to FY23. Funding applied to incrementally fund ARC Spiral 1 Capability Delivery and Spiral 2 Capability Development and Integration in FY 2022. DBD DT&E for the EMD Program begins in FY 2023 (increase $2.377M). DBD Test & Evaluation continues through FY 2023. | | | | | | | | | | | | | | | |

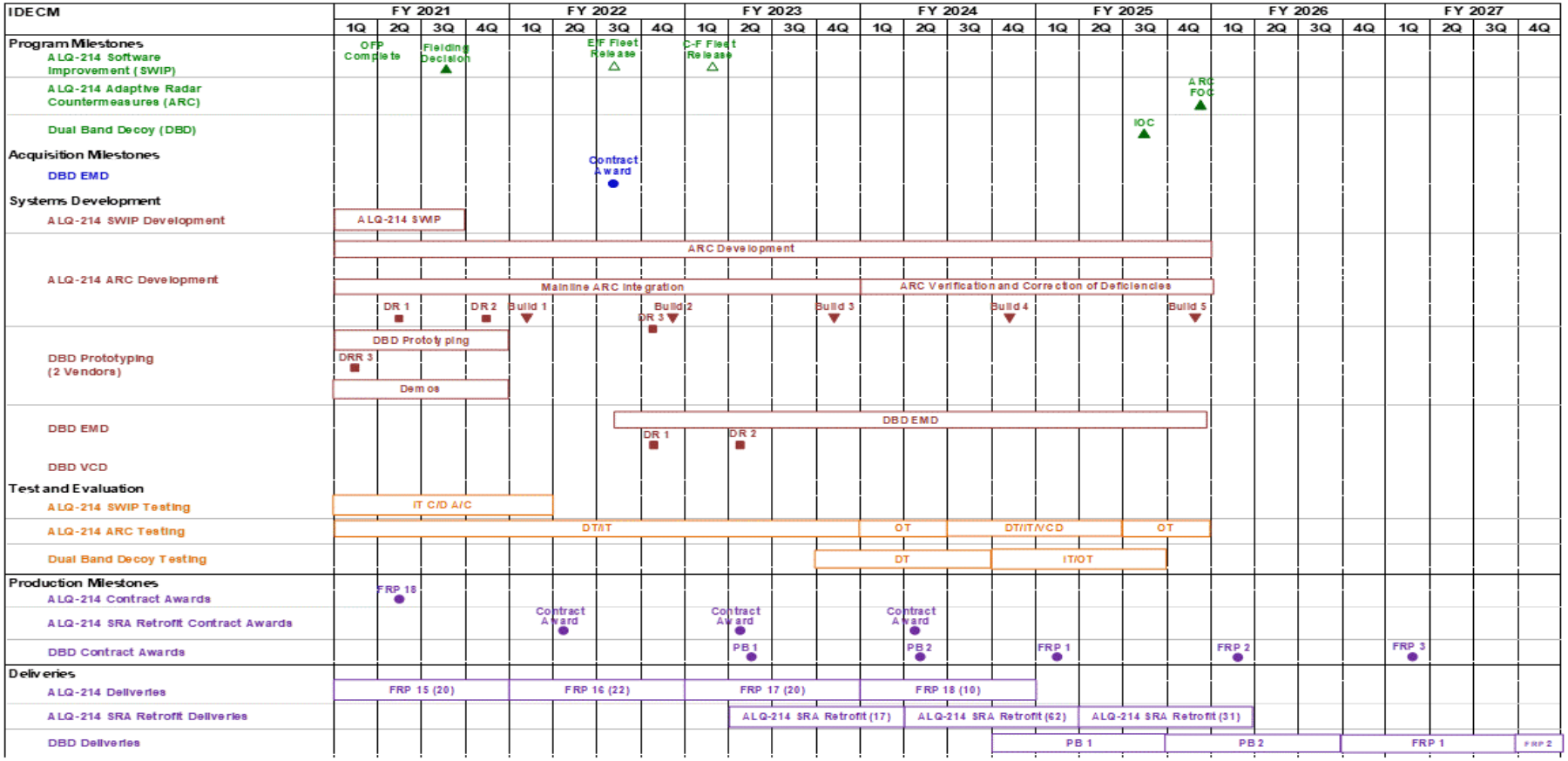
**Management Services ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Travel | Allot | NAWCAD : Pax River, MD | 0.975 | 0.054 | Oct 2020 | 0.056 | Oct 2021 | 0.056 | Oct 2022 | - | | 0.056 | 0.116 | 1.257 | - |
| Prior Year Mgmt costs no longer funded in FYDP | Various | Various : Various | 88.935 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 88.935 | - |
| | | **Subtotal** | 89.910 | 0.054 | | 0.056 | | 0.056 | | - | | 0.056 | 0.116 | 90.192 | N/A |

| | Prior Years | FY 2021 | | FY 2022 | | FY 2023 Base | | FY 2023 OCO | | FY 2023 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Project Cost Totals** | 593.019 | 52.790 | | 69.509 | | 51.808 | | - | | 51.808 | 85.905 | 853.031 | N/A |

**Remarks**

| Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>2175 / *Tactical Air Electronic Warfare* |



| Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>2175 / *Tactical Air Electronic Warfare* |

## Schedule Details

| | Start | | End | |
|---|---|---|---|---|
| **Events by Sub Project** | **Quarter** | **Year** | **Quarter** | **Year** |
| ***IDECM*** | | | | |
| Acquisition Milestones: ALQ-214 SW Improvement: ALQ-214 SW Improvement Fielding Decision | 3 | 2021 | 3 | 2021 |
| Acquisition Milestones: ALQ-214 SW Improvement: ALQ-214 SW Improvement E/F Fleet Release | 3 | 2022 | 3 | 2022 |
| Acquisition Milestones: ALQ-214 SW Improvement: ALQ-214 SW Improvement C/F Fleet Release | 1 | 2023 | 1 | 2023 |
| Acquisition Milestones: ALQ-214 ARC: ALQ-214 ARC FOC | 4 | 2025 | 4 | 2025 |
| Acquisition Milestones: DBD EMD: Contract Award | 3 | 2022 | 3 | 2022 |
| Acquisition Milestones: DBD: Iinitial Operational Capability (IOC) | 3 | 2025 | 3 | 2025 |
| Systems Development: ALQ-214 SW Improvement Development: ALQ-214 SW Improvement Development | 1 | 2021 | 3 | 2021 |
| Systems Development: ALQ-214 ARC Development: ARC Development | 1 | 2021 | 4 | 2025 |
| Systems Development: ALQ-214 ARC Development: ALQ-214 ARC Mainline Integration | 1 | 2021 | 4 | 2023 |
| Systems Development: ALQ-214 ARC Development: ARC Verification and Correction of Deficiencies | 1 | 2024 | 4 | 2025 |
| Systems Development: ALQ-214 ARC Development: ALQ-214 ARC Design Review 1 | 2 | 2021 | 2 | 2021 |
| Systems Development: ALQ-214 ARC Development: ALQ-214 ARC Design Review 2 | 4 | 2021 | 4 | 2021 |
| Systems Development: ALQ-214 ARC Development: ALQ-214 ARC Design Review 3 | 4 | 2022 | 4 | 2022 |
| Systems Development: ALQ-214 ARC Development: ALQ-214 ARC ML Build 1 | 1 | 2022 | 1 | 2022 |
| Systems Development: ALQ-214 ARC Development: ALQ-214 ARC ML Build 2 | 4 | 2022 | 4 | 2022 |
| Systems Development: ALQ-214 ARC Development: ALQ-214 ARC ML Build 3 | 4 | 2023 | 4 | 2023 |
| Systems Development: ALQ-214 ARC Development: ALQ-214 ARC ML Build 4 | 4 | 2024 | 4 | 2024 |

| Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>2175 / *Tactical Air Electronic Warfare* |

| | Start | | End | |
|---|---|---|---|---|
| **Events by Sub Project** | **Quarter** | **Year** | **Quarter** | **Year** |
| Systems Development: ALQ-214 ARC Development: ALQ-214 ARC ML Build 5 | 4 | 2025 | 4 | 2025 |
| Systems Development: Dual Band Decoy Prototyping (2 Vendors): DBD Prototyping | 1 | 2021 | 4 | 2021 |
| Systems Development: Dual Band Decoy Prototyping (2 Vendors): Design Readiness Review 3 | 1 | 2021 | 1 | 2021 |
| Systems Development: Dual Band Decoy Prototyping (2 Vendors): Prototype Demonstrations | 1 | 2021 | 4 | 2021 |
| Systems Development: Dual Band Decoy EMD: DBD EMD | 3 | 2022 | 4 | 2025 |
| Systems Development: Dual Band Decoy EMD: Design Review 1 | 4 | 2022 | 4 | 2022 |
| Systems Development: Dual Band Decoy EMD: Design Review 2 | 2 | 2023 | 2 | 2023 |
| Test and Evaluation: ALQ-214 SW Improvement Testing: ALQ-214 SW Improvement Integrated Testing (IT) on C/D Aircraft | 1 | 2021 | 1 | 2022 |
| Test and Evaluation: ALQ-214 ARC Testing: ALQ-214 ARC Developmental and Integrated Testing | 1 | 2021 | 4 | 2023 |
| Test and Evaluation: ALQ-214 ARC Testing: ALQ-214 ARC Operational Testing | 1 | 2024 | 2 | 2024 |
| Test and Evaluation: ALQ-214 ARC Testing: ALQ-214 ARC Developmental/Integrated Testing/Verification of Deficiencies | 3 | 2024 | 2 | 2025 |
| Test and Evaluation: ALQ-214 ARC Testing: ALQ-214 ARC Operational Testing' | 3 | 2025 | 4 | 2025 |
| Test and Evaluation: Dual Band Decoy Testing: DBD Developmental Testing | 4 | 2023 | 3 | 2024 |
| Test and Evaluation: Dual Band Decoy Testing: DBD Integrated Testing/Operational Testing | 4 | 2024 | 3 | 2025 |
| Production Milestones: IDECM Block 4 Contract Awards: IDECM Block 4 Full-Rate Production (FRP) 18 | 2 | 2021 | 2 | 2021 |
| Production Milestones: Shop Replaceable Assembly Contract Awards: Shop Replaceable Assembly 1 | 2 | 2022 | 2 | 2022 |
| Production Milestones: Shop Replaceable Assembly Contract Awards: Shop Replaceable Assembly 2 | 2 | 2023 | 2 | 2023 |
| Production Milestones: Shop Replaceable Assembly Contract Awards: Shop Replaceable Assembly 3 | 2 | 2024 | 2 | 2024 |

| Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>2175 / *Tactical Air Electronic Warfare* |

| | Start | | End | |
|---|---|---|---|---|
| **Events by Sub Project** | **Quarter** | **Year** | **Quarter** | **Year** |
| Production Milestones: Dual Band Decoy Contract Awards: DBD Production Build (PB 1) | 2 | 2023 | 2 | 2023 |
| Production Milestones: Dual Band Decoy Contract Awards: DBD Production Build (PB 2) | 2 | 2024 | 2 | 2024 |
| Production Milestones: Dual Band Decoy Contract Awards: DBD Full Rate Production (FRP1) | 1 | 2025 | 1 | 2025 |
| Production Milestones: Dual Band Decoy Contract Awards: DBD Full Rate Production (FRP2) | 1 | 2026 | 1 | 2026 |
| Production Milestones: Dual Band Decoy Contract Awards: DBD Full Rate Production (FRP3) | 1 | 2027 | 1 | 2027 |
| Deliveries: IDECM Block 4: IDECM Block 4 FRP 15 Deliveries (20) | 1 | 2021 | 4 | 2021 |
| Deliveries: IDECM Block 4: IDECM Block 4 FRP 16 Deliveries (22) | 1 | 2022 | 4 | 2022 |
| Deliveries: IDECM Block 4: IDECM Block 4 FRP 17 Deliveries (20) | 1 | 2023 | 4 | 2023 |
| Deliveries: IDECM Block 4: IDECM Block 4 FRP 18 Deliveries (10) | 1 | 2024 | 4 | 2024 |
| Deliveries: Shop Replaceable Assembly: Shop Replaceable Assembly Deliveries 1 (17) | 2 | 2023 | 1 | 2024 |
| Deliveries: Shop Replaceable Assembly: Shop Replaceable Assembly Deliveries 1 (62) | 2 | 2024 | 1 | 2025 |
| Deliveries: Shop Replaceable Assembly: Shop Replaceable Assembly Deliveries 1 (31) | 2 | 2025 | 1 | 2026 |
| Deliveries: DBD: DBD PB 1 Deliveries | 4 | 2024 | 3 | 2025 |
| Deliveries: DBD: DBD PB 2 Deliveries | 4 | 2025 | 3 | 2026 |
| Deliveries: DBD: DBD FRP 1 Deliveries | 4 | 2026 | 3 | 2027 |
| Deliveries: DBD: DBD FRP 2 Deliveries | 4 | 2027 | 4 | 2027 |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy | | | Date: April 2022 |
|---|---|---|---|
| Appropriation/Budget Activity<br>1319 / 5 | R-1 Program Element (Number/Name)<br>PE 0604270N / *Electronic Warfare (EW) Dev* | Project (Number/Name)<br>3308 / *Technology Development* | |

| COST ($ in Millions) | Prior Years | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total | FY 2024 | FY 2025 | FY 2026 | FY 2027 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3308: *Technology Development* | 14.575 | 7.269 | 8.354 | 13.533 | - | 13.533 | 20.433 | 27.876 | 19.602 | 21.557 | Continuing | Continuing |
| Quantity of RDT&E Articles | | - | - | - | - | - | - | - | - | - | | |

**Note**

PE 0604279N consolidated to PE 0604270N beginning in FY 2017.

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

Project Unit 3308 / Technology Development funds efforts that focus on the quick reaction prototyping and fielding of Tactical Electronic Warfare (EW)/countermeasures solutions for increased resilience and survivability by improving the active electronic self-defense of tactical aircraft. This self-protection provides friendly forces the ability to deploy, survive, operate, maneuver, and regenerate in all domains while under attack as well as strike diverse targets inside adversary air and missile defense networks to destroy mobile power-projection platforms. This Project also includes/enables integrated Aircraft Survivability Equipment (iASE) which improves situational awareness for own-ship, wingman, and distributed command and control. Significant investments have been made in the modular hardware and reprogrammable software resident in ASE capability which is fielded today. Technology Development makes specific investments towards: countermeasure/jammer/receiver algorithm development, Advanced EW Suite capability studies/investigation/analysis, threat data file and model updates as modern threats continue to evolve. These updated data files and algorithms can be deployed within hours of release by squadron maintenance personnel to aircraft while still on the ramp or flight deck. This program directly addresses the operational requirement of Strike Tactical Air platforms for optimization of EW/countermeasure solutions across the Department of Navy.

| B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each) | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total |
|---|---|---|---|---|---|
| ***Title:*** Technology Development | 7.269 | 8.354 | 13.533 | 0.000 | 13.533 |
| ***Articles:*** | - | - | - | - | - |
| ***FY 2022 Plans:***<br>Perform EW vulnerability studies/analysis, product development and test conducted for the ALQ-214 system on the F/A-18 C/D and E/F for both USMC and Navy aircraft. Develop, model and test advanced electronic countermeasure algorithms for USMC and Navy aircraft to defend against modern threats both inside and outside the currently protected RF spectrum. Contractor and Organic SWIP, ARC, and DBD modeling, simulation, and technique optimization development continued in FY22. | | | | | |
| ***FY 2023 Base Plans:***<br>Perform EW vulnerability studies/analysis, product development and test conducted for the ALQ-214 system on the F/A-18 C/D and E/F for both USMC and Navy aircraft. Develop, model and test advanced electronic countermeasure algorithms for USMC and Navy aircraft to defend against modern threats both inside and outside the currently protected RF spectrum. Provide investments for the continuation and development of | | | | | |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>3308 / *Technology Development* |

| B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each) | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total |
|---|---|---|---|---|---|
| emerging RF Threat ECM and T&E Capability Enhancements, addresses current and future threats on the roadmap that are not in the threat library (new threats not in MDFs). Develops advanced hardware-in-the-loop Modeling and Simulation flight test surrogates to keep pace with modern advanced threats in support of currently fielded systems and development and testing of Adaptive Radar Countermeasures (ARC).<br>***FY 2023 OCO Plans:***<br>N/A<br>***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>Increase of $5.989M from FY 2022 to FY 2023 to address emerging RF Threats and Countermeasure response optimization, and development of T&E Modeling and Simulation capability. FY 2023 funding request was reduced by $.810 million to account for the availability of prior year execution balances. | | | | | |
| **Accomplishments/Planned Programs Subtotals** | 7.269 | 8.354 | 13.533 | 0.000 | 13.533 |

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

N/A

**Remarks**

**D. Acquisition Strategy**

Electronic Warfare/vulnerability studies/analysis, product development and test conducted for strike aircraft across the Future Years Defense Program (FYDP).

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>3308 / *Technology Development* |

**Product Development ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Software Dev - ALQ-214 SW Dev | SS/CPFF | L3Harris : Clifton,NJ | 1.977 | 0.000 | | 1.953 | Dec 2021 | 0.000 | | - | | 0.000 | Continuing | Continuing | Continuing |
| Software Dev - ALQ-214 SW Dev | SS/CPFF | NSMA : Washington, DC | 0.000 | 0.000 | | 0.000 | | 3.295 | Mar 2023 | - | | 3.295 | Continuing | Continuing | Continuing |
| Software Dev - ALQ-214 SW Dev | WR | NAWCWD : Point Mugu, CA | 2.690 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | Continuing | Continuing | Continuing |
| Software Dev - ALQ-214 SW Dev | MIPR | Wright Patterson AFB : Dayton, OH | 4.200 | 1.882 | Mar 2021 | 0.000 | | 0.000 | | - | | 0.000 | Continuing | Continuing | Continuing |
| Software Dev - ALQ-214 SW Dev | C/BA | Leidos : Arlington, VA | 0.000 | 2.573 | Jul 2021 | 3.900 | Nov 2021 | 7.605 | Dec 2022 | - | | 7.605 | Continuing | Continuing | Continuing |
| | | **Subtotal** | 8.867 | 4.455 | | 5.853 | | 10.900 | | - | | 10.900 | Continuing | Continuing | N/A |

**Remarks**

Contractor SWIP and ARC modeling, simulation, and technique optimization development will continue through FY 2023.
Product Development includes Threat Characterization efforts continuing into FY 2023. FY 2022 funding reallocated from Wright Patterson to L3Harris ($1.953) in FY22 for the implementation of the analysis driven responses for the ALQ-214. FY 2023 increase ($3.295M) to Navy Systems Management Activity (NSMA) is in support of a Software/Firmware Development Effort to enhance Aircraft Survivability. FY 2023 increase ($3.705M) at Leidos is to address Adaptive Radar Countermeasures (ARC) Mainline Integration and for implementation of optimized ARC Threat Techniques.

**Support ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Software Dev - ALQ-214 SW Dev | WR | NAWCWD : Point Mugu, CA | 0.647 | 1.284 | Nov 2020 | 0.829 | Nov 2021 | 0.667 | Nov 2022 | - | | 0.667 | Continuing | Continuing | Continuing |
| Software Dev - ALQ-214 SW Dev | C/CPFF | Johns Hopkins : Baltimore, MD | 0.735 | 0.000 | | 0.300 | Nov 2021 | 0.481 | Nov 2022 | - | | 0.481 | Continuing | Continuing | Continuing |
| Software Dev - ALQ-214 SW Dev | C/BA | Leidos : Arlington, VA | 1.000 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | Continuing | Continuing | Continuing |
| Software Dev - ALQ-214 SW Dev | WR | NRL : Arlington, VA | 0.075 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | Continuing | Continuing | Continuing |
| | | **Subtotal** | 2.457 | 1.284 | | 1.129 | | 1.148 | | - | | 1.148 | Continuing | Continuing | N/A |

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>3308 / *Technology Development* |

**Support ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

**Remarks**

Contractor and Organic SWIP and ARC modeling, simulation, and technique optimization development will continue into FY 2023. FY23 decrease ($.162M) at Point Mugu to cover additional tasking at John's Hopkins. FY23 increase ($.181M) to John's Hopkins to address Mission Data File (MDF), threat identification algorithms and Technique Development for new advanced threats.

**Test and Evaluation ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Engineering & Evaluation | WR | NAWCWD : Point Mugu, CA | 0.000 | 1.530 | Nov 2020 | 1.372 | Nov 2021 | 1.485 | Nov 2022 | - | | 1.485 | Continuing | Continuing | Continuing |
| Engineering & Evaluation | WR | NAWCWD : China Lake, CA | 3.251 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | Continuing | Continuing | Continuing |
| Need Item Text | C/BA | Not Specified : Not Specified | 0.000 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 0.000 | - |
| | | **Subtotal** | 3.251 | 1.530 | | 1.372 | | 1.485 | | - | | 1.485 | Continuing | Continuing | N/A |

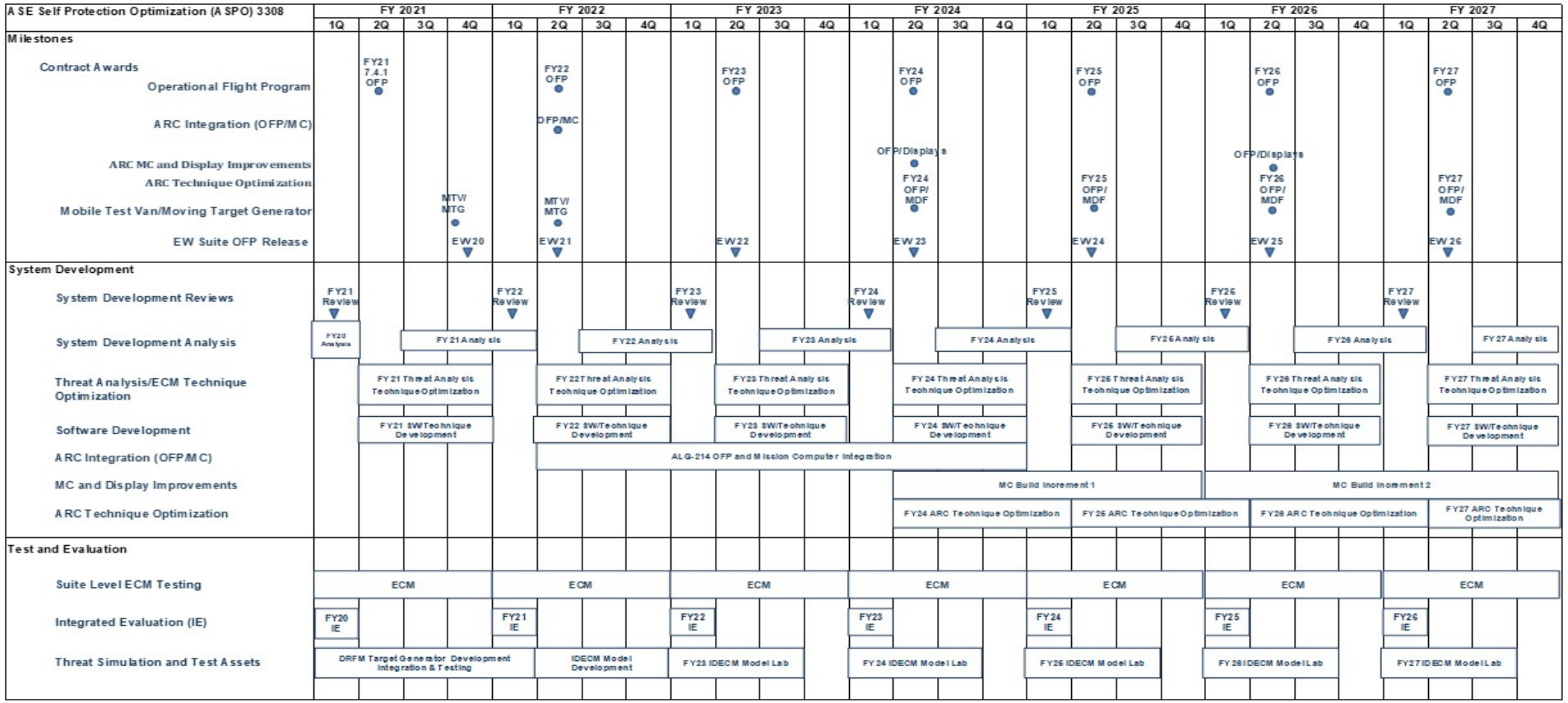
**Remarks**

Organic SWIP and ARC modeling, simulation, and technique optimization development will continue through FY 2023. FY23 increase ($.113M) required for government oversite to address Software Modernization efforts and Threat Techniques at Contractor facilities.

| | Prior Years | FY 2021 | | FY 2022 | | FY 2023 Base | | FY 2023 OCO | | FY 2023 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Project Cost Totals** | 14.575 | 7.269 | | 8.354 | | 13.533 | | - | | 13.533 | Continuing | Continuing | N/A |

**Remarks**

| Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>3308 / *Technology Development* |



| Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>3308 / *Technology Development* |

## Schedule Details

| | Start | | End | |
|---|---|---|---|---|
| **Events by Sub Project** | **Quarter** | **Year** | **Quarter** | **Year** |
| ***(U) ASE Self Protection Optimization (ASPO)*** | | | | |
| Milestones: Contract Awards: FY-21 Operational Flight Program | 2 | 2021 | 2 | 2021 |
| Milestones: Contract Awards: FY-22 Operational Flight Program | 2 | 2022 | 2 | 2022 |
| Milestones: Contract Awards: FY-23 Operational Flight Program | 2 | 2023 | 2 | 2023 |
| Milestones: Contract Awards: FY-24 Operational Flight Program | 2 | 2024 | 2 | 2024 |
| Milestones: Contract Awards: FY-25 Operational Flight Program | 2 | 2025 | 2 | 2025 |
| Milestones: Contract Awards: FY-26 Operational Flight Program | 2 | 2026 | 2 | 2026 |
| Milestones: Contract Awards: FY-27 Operational Flight Program | 2 | 2027 | 2 | 2027 |
| Milestones: ARC Integration (Operational Flight Program/Mission Computer): ARC Integration (OFP/MC) | 2 | 2022 | 2 | 2022 |
| Milestones: ARC Mission Computer and Display Improvements: FY-24 ARC MC and Display Improvements | 2 | 2024 | 2 | 2024 |
| Milestones: ARC Mission Computer and Display Improvements: FY-26 ARC MC and Display Improvements | 2 | 2026 | 2 | 2026 |
| Milestones: ARC Technique Optimization: FY-24 ARC Technique Optimization | 2 | 2024 | 2 | 2024 |
| Milestones: ARC Technique Optimization: FY-25 ARC Technique Optimization | 2 | 2025 | 2 | 2025 |
| Milestones: ARC Technique Optimization: FY-26 ARC Technique Optimization | 2 | 2026 | 2 | 2026 |
| Milestones: ARC Technique Optimization: FY-27 ARC Technique Optimization | 2 | 2027 | 2 | 2027 |
| Milestones: Mobile Test Van/Moving Target Generator: FY-21 Mobile Test Van/Moving Target Generator | 4 | 2021 | 4 | 2021 |
| Milestones: Mobile Test Van/Moving Target Generator: FY-22 Mobile Test Van/Moving Target Generator | 2 | 2022 | 2 | 2022 |
| Milestones: EW Suite OFP Release: Release-20 | 4 | 2021 | 4 | 2021 |

| Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>3308 / *Technology Development* |

| | Start | | End | |
|---|---|---|---|---|
| **Events by Sub Project** | **Quarter** | **Year** | **Quarter** | **Year** |
| Milestones: EW Suite OFP Release: Release-21 | 2 | 2022 | 2 | 2022 |
| Milestones: EW Suite OFP Release: Release-22 | 2 | 2023 | 2 | 2023 |
| Milestones: EW Suite OFP Release: Release-23 | 2 | 2024 | 2 | 2024 |
| Milestones: EW Suite OFP Release: Release-24 | 2 | 2025 | 2 | 2025 |
| Milestones: EW Suite OFP Release: Release-25 | 2 | 2026 | 2 | 2026 |
| Milestones: EW Suite OFP Release: Release-26 | 2 | 2027 | 2 | 2027 |
| Systems Development: Systems Development Reviews: FY-21 Review | 1 | 2021 | 1 | 2021 |
| Systems Development: Systems Development Reviews: FY-22 Review | 1 | 2022 | 1 | 2022 |
| Systems Development: Systems Development Reviews: FY-23 Review | 1 | 2023 | 1 | 2023 |
| Systems Development: Systems Development Reviews: FY-24 Review | 1 | 2024 | 1 | 2024 |
| Systems Development: Systems Development Reviews: FY-25 Review | 1 | 2025 | 1 | 2025 |
| Systems Development: Systems Development Reviews: FY-26 Review | 1 | 2026 | 1 | 2026 |
| Systems Development: Systems Development Reviews: FY-27 Review | 1 | 2027 | 1 | 2027 |
| Systems Development: System Development Analysis: FY-20 Analysis | 1 | 2021 | 1 | 2021 |
| Systems Development: System Development Analysis: FY-21 Analysis | 3 | 2021 | 1 | 2022 |
| Systems Development: System Development Analysis: FY-22 Analysis | 3 | 2022 | 1 | 2023 |
| Systems Development: System Development Analysis: FY-23 Analysis | 3 | 2023 | 1 | 2024 |
| Systems Development: System Development Analysis: FY-24 Analysis | 3 | 2024 | 1 | 2025 |
| Systems Development: System Development Analysis: FY-25 Analysis | 3 | 2025 | 1 | 2026 |
| Systems Development: System Development Analysis: FY-26 Analysis | 3 | 2026 | 1 | 2027 |
| Systems Development: System Development Analysis: FY-27 Analysis | 3 | 2027 | 4 | 2027 |
| Systems Development: Threat Analysis/Technique Optimization: FY-21 Threat Analysis/Technique Optimization | 2 | 2021 | 4 | 2021 |
| Systems Development: Threat Analysis/Technique Optimization: FY-22 Threat Analysis/Technique Optimization | 2 | 2022 | 4 | 2022 |

| Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>3308 / *Technology Development* |

| | Start | | End | |
|---|---|---|---|---|
| **Events by Sub Project** | **Quarter** | **Year** | **Quarter** | **Year** |
| Systems Development: Threat Analysis/Technique Optimization: FY-23 Threat Analysis/Technique Optimization | 2 | 2023 | 4 | 2023 |
| Systems Development: Threat Analysis/Technique Optimization: FY-24 Threat Analysis/Technique Optimization | 2 | 2024 | 4 | 2024 |
| Systems Development: Threat Analysis/Technique Optimization: FY-25 Threat Analysis/Technique Optimization | 2 | 2025 | 4 | 2025 |
| Systems Development: Threat Analysis/Technique Optimization: FY-26 Threat Analysis/Technique Optimization | 2 | 2026 | 4 | 2026 |
| Systems Development: Threat Analysis/Technique Optimization: FY-27 Threat Analysis/Technique Optimization | 2 | 2027 | 4 | 2027 |
| Systems Development: Software Development: FY-21 SW/Technique Development | 2 | 2021 | 4 | 2021 |
| Systems Development: Software Development: FY-22 SW/Technique Development | 2 | 2022 | 4 | 2022 |
| Systems Development: Software Development: FY-23 SW/Technique Development | 2 | 2023 | 4 | 2023 |
| Systems Development: Software Development: FY-24 SW/Technique Development | 2 | 2024 | 4 | 2024 |
| Systems Development: Software Development: FY-25 SW/Technique Development | 2 | 2025 | 4 | 2025 |
| Systems Development: Software Development: FY-26 SW/Technique Development | 2 | 2026 | 4 | 2026 |
| Systems Development: Software Development: FY-27 SW/Technique Development | 2 | 2027 | 4 | 2027 |
| Systems Development: ARC Integration (Operational Flight Program Mission Computer): ALQ-214 OFP and Mission Cumputer Integration | 2 | 2022 | 4 | 2024 |
| Systems Development: Mission Computer and Display Improvements: MC' and Display Improvements | 2 | 2024 | 4 | 2025 |
| Systems Development: Mission Computer and Display Improvements: MC and Display Improvements | 1 | 2026 | 4 | 2027 |
| Systems Development: ARC Technique Optimization: FY-24 ARC Technique Optimization | 2 | 2024 | 1 | 2025 |
| Systems Development: ARC Technique Optimization: FY-25 ARC Technique Optimization | 2 | 2025 | 1 | 2026 |

| Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>3308 / *Technology Development* |

| | Start | | End | |
|---|---|---|---|---|
| **Events by Sub Project** | **Quarter** | **Year** | **Quarter** | **Year** |
| Systems Development: ARC Technique Optimization: FY-26 ARC Technique Optimization | 2 | 2026 | 1 | 2027 |
| Systems Development: ARC Technique Optimization: FY-27 ARC Technique Optimization | 2 | 2027 | 4 | 2027 |
| Test and Evaluation: Suite Level ECM Testing: FY-21 ECM Testing | 1 | 2021 | 4 | 2021 |
| Test and Evaluation: Suite Level ECM Testing: FY-22 ECM Testing | 1 | 2022 | 4 | 2022 |
| Test and Evaluation: Suite Level ECM Testing: FY-23 ECM Testing | 1 | 2023 | 4 | 2023 |
| Test and Evaluation: Suite Level ECM Testing: FY-24 ECM Testing | 1 | 2024 | 4 | 2024 |
| Test and Evaluation: Suite Level ECM Testing: FY-25 ECM Testing | 1 | 2025 | 4 | 2025 |
| Test and Evaluation: Suite Level ECM Testing: FY-26 ECM Testing | 1 | 2026 | 4 | 2026 |
| Test and Evaluation: Suite Level ECM Testing: FY-27 ECM Testing | 1 | 2027 | 4 | 2027 |
| Test and Evaluation: Integrated Evaluation: FY-20 Integrated Evaluation | 1 | 2021 | 1 | 2021 |
| Test and Evaluation: Integrated Evaluation: FY-21 Integrated Evaluation | 1 | 2022 | 1 | 2022 |
| Test and Evaluation: Integrated Evaluation: FY-22 Integrated Evaluation | 1 | 2023 | 1 | 2023 |
| Test and Evaluation: Integrated Evaluation: FY-23 Integrated Evaluation | 1 | 2024 | 1 | 2024 |
| Test and Evaluation: Integrated Evaluation: FY-24 Integrated Evaluation | 1 | 2025 | 1 | 2025 |
| Test and Evaluation: Integrated Evaluation: FY-25 Integrated Evaluation | 1 | 2026 | 1 | 2026 |
| Test and Evaluation: Integrated Evaluation: FY-26 Integrated Evaluation | 1 | 2027 | 1 | 2027 |
| Test and Evaluation: Threat Simulation and Test Assets: DFRM Target Generator Development Integration and Testing | 1 | 2021 | 1 | 2022 |
| Test and Evaluation: Threat Simulation and Test Assets: IDECM Model Development | 2 | 2022 | 4 | 2022 |
| Test and Evaluation: Threat Simulation and Test Assets: IDECM FY-23 Model Lab Integration | 1 | 2023 | 3 | 2023 |
| Test and Evaluation: Threat Simulation and Test Assets: IDECM FY-24 Model Lab Update | 1 | 2024 | 3 | 2024 |
| Test and Evaluation: Threat Simulation and Test Assets: IDECM FY-25 Model Lab Integration | 1 | 2025 | 3 | 2025 |

| Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>3308 / *Technology Development* |

| | Start | | End | |
|---|---|---|---|---|
| **Events by Sub Project** | **Quarter** | **Year** | **Quarter** | **Year** |
| Test and Evaluation: Threat Simulation and Test Assets: IDECM FY-26 Model Lab Integration | 1 | 2026 | 3 | 2026 |
| Test and Evaluation: Threat Simulation and Test Assets: IDECM FY-27 Model Lab Integration | 1 | 2027 | 3 | 2027 |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy | | | Date: April 2022 |
|---|---|---|---|
| Appropriation/Budget Activity<br>1319 / 5 | R-1 Program Element (Number/Name)<br>PE 0604270N / *Electronic Warfare (EW) Dev* | Project (Number/Name)<br>3309 / *Assault Survivability Optimization* | |

| COST ($ in Millions) | Prior Years | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total | FY 2024 | FY 2025 | FY 2026 | FY 2027 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3309: *Assault Survivability Optimization* | 12.061 | 0.796 | 23.395 | 37.058 | - | 37.058 | 38.229 | 37.450 | 10.160 | 10.263 | Continuing | Continuing |
| Quantity of RDT&E Articles | 480 | - | 2,520 | 15 | - | 15 | - | - | - | - | | |

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

FY 2023 includes funding required to implement Multi-Layered Obstructed Brokered Hub (MOB Hub) and integrated Aircraft Survivability Equipment (iASE) capability for F/A-18 aircraft and to continue Common Carriage for USN aircraft platforms. MOB Hub iASE funding is for hardware/software redesign and qualification of the ALE-47 Programmer. This upgrade enables advanced expendable countermeasures to enhance countermeasure response, and provide additional battlespace awareness for own-ship, wingman and other mission participants. MOB Hub iASE replaces obsolete operational flight program and hardware, providing data to the gateway necessary for survivability in the current and future threat scenarios facing USN operational missions. Common Carriage and iASE ALE-47 program develops solutions to aircraft survivability gaps against current and future threat systems. Solutions address the Air Expendable Countermeasures (AECM) requirement for maintaining a portfolio of countermeasures capable of defeating current and advancing surface-to-air and air-to-air threat missile systems to include the development, testing, and rapid fielding of advanced countermeasures and enhanced employment techniques needed to support Fleet combat operations. Countermeasure dispensing techniques are developed using capability advancements tied to iASE investments by leveraging available sensor data from the iASE suite and aircraft data from the mission computer. Improved countermeasure dispense techniques are rapidly delivered to operational Fleet aircraft through Mission Data File updates via established software update processes. New expendable countermeasure technology developed in industry, by other DoD Components and through other R&D programs can be transitioned to AECM Program of Record to meet the required operational platform survivability without further investment in iASE systems. This Project also includes/ enables survivability solutions using existing iASE data which improves situational awareness for own-ship, wingman, and distributed command and control. Resources will be applied to the following areas: 1) Studies and evaluations to optimize employment of current countermeasures and iASE capabilities. 2) Development and demonstration of advanced expendable countermeasures and countermeasure techniques. 3) Testing and evaluation of advanced countermeasures. 4) Development of system software enhancements and integration for the testing and deployment of advanced countermeasure techniques. 5) Development of and upgrades to modeling tools and specialized equipment required to conduct evaluation of advanced countermeasures against proliferating threats. Test assets include ALE-47 MOB/ iASE programmers 15ea.

| B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each) | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total |
|---|---|---|---|---|---|
| ***Title:*** Assault Survivability Optimization | 0.796 | 23.395 | 37.058 | 0.000 | 37.058 |
| ***Articles:*** | - | 2,520 | 15 | - | 15 |
| ***FY 2022 Plans:***<br>Award development contract for ALE-47 Common Carriage Engineering, Manufacturing Development hardware, software and support equipment design and development effort including associated Government efforts. Support the development and integration of the advanced AN/ALE-47 iASE capability to improve | | | | | |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>3309 / *Assault Survivability Optimization* |

| B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each) | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total |
|---|---|---|---|---|---|
| countermeasure techniques developed for improved survivability and aircrew situational awareness. Continue development and testing of advanced countermeasure techniques. Perform modeling and simulation to support effectiveness testing of new 1x1x8 advanced countermeasure flares for F/A-18 and MH-60R/S. Continue development of advanced countermeasures to defeat emerging threats focused on 1x1x8 countermeasures to support transition of Common Carriage.<br>Breakdown of test assets follows:<br>ALE-47 Systems 20ea<br>MJU-77 500ea<br>MJU-76 500ea<br>MJU-78 500ea<br>Chaff 1,000ea | | | | | |
| ***FY 2023 Base Plans:***<br>Organic government effort begins hardware/software redesign and qualification for F/A-18 Multi-Layered Obstructed Brokered Hub (MOB Hub) and integrated Aircraft Survivability Equipment (iASE) implementation. Continue ALE-47 Common Carriage Engineering, Manufacturing Development hardware, software and support equipment design and development effort including associated Government efforts. Support the development and integration of the advanced AN/ALE-47 iASE capability to improve countermeasure techniques developed for improved survivability and aircrew situational awareness. Continue development and testing of advanced countermeasure techniques. Perform modeling and simulation to support effectiveness testing of new 1x1x8 advanced countermeasure chaff for F/A-18. Continue development of advanced countermeasures to defeat emerging threats focused on 1x1x8 countermeasures to support transition of Common Carriage.<br>Breakdown of test assets follows:<br>ALE-47 MOB/iASE programmers 15ea. | | | | | |
| ***FY 2023 OCO Plans:***<br>N/A | | | | | |
| ***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>Increase from FY 2022 to FY 2023 includes $13.663 million to begin ALE-47 MOB Hub iASE on F/A-18 aircraft and to continue ALE-47 Common Carriage efforts. MOB Hub and iASE will support advanced expendable countermeasure tactical employment capabilities, while improving situational awareness. This provides rapid technology and advanced integration within a common enclosure for F/A-18 aircraft. This ALE-47 configuration allows dynamic interface with platform Mission Computers, ASE sensors, weapons systems, | | | | | |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>3309 / *Assault Survivability Optimization* |

| B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each) | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total |
|---|---|---|---|---|---|
| Position, Navigation, and Time (PNT) and other aircraft system's data to provide data for development of new software applications that can provide immediate warfighter capabilities without modification of aircraft mission computer software. | | | | | |
| **Accomplishments/Planned Programs Subtotals** | 0.796 | 23.395 | 37.058 | 0.000 | 37.058 |

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

| Line Item | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total | FY 2024 | FY 2025 | FY 2026 | FY 2027 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|
| • PANMC/0182: *Air Expendable Countermeasures* | 0.000 | 4.335 | 13.070 | - | 13.070 | 9.092 | 7.710 | 1.634 | 11.540 | Continuing | Continuing |
| • APN-5/0576: *ALE-39 to ALE-47 Retrofit/Common Carriage (OSIP 006-00)* | 0.000 | 0.000 | 0.000 | - | 0.000 | 0.000 | 39.577 | 48.312 | 49.400 | 370.229 | 507.518 |

**Remarks**

PANMC 0182 Air Expendables Countermeasures (CM) Common Carriage funding represents only a portion of the total PANMC 0182 Air Expendables CM Budget. APN-5/0576 Common Carriage and MOB Hub iASE budget begins in FY 2025.

**D. Acquisition Strategy**

Acquisition strategy is to leverage improvements in air expendable countermeasures technology and integration of existing iASE sensor and platform data to enhance platform survivability on USN and USMC platforms through more effective dispense techniques, investing in enhancements in modeling and simulation tools to better evaluate countermeasure effectiveness against advancing threat systems, upgrading test and evaluation equipment to incorporate current and future threats for effectiveness tests, and developing and demonstrating advanced concept countermeasures for future threats. New advanced countermeasures are then transitioned to the Procurement of Ammunition Navy and Marine Corps appropriation for procurement and fielding. New optimized and advanced countermeasure techniques are delivered via operational Mission Data Files (MDF) to increase aircraft/aircrew survivability. F-35 brings square countermeasures to Fleet operations and provides the opportunity to drastically improve interoperability across USN/USMC, DoD and Coalition warfare operations by employing a Common Carriage solution programmed to start Engineering and Manufacturing Development for USN Aircraft in FY 2022 for IOC in FY 2026. Common Carriage will standardize countermeasures across Services to increase capability/lethality/survivability and countermeasure load-out to support operations in contested environments. FY 2023 begins implementation of ALE-47 MOB Hub iASE to fully leverage the opportunities of the Common Carriage upgrade. ALE-47 MOB Hub iASE strategy is to utilize government facility for hardware/ software redesign, qualification and production of the ALE-47 Programmer for F/A-18 platform integration/test.

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy | | | Date: April 2022 |
|---|---|---|---|
| Appropriation/Budget Activity<br>1319 / 5 | R-1 Program Element (Number/Name)<br>PE 0604270N / *Electronic Warfare (EW) Dev* | Project (Number/Name)<br>3309 / *Assault Survivability Optimization* | |

**Product Development ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Expendable Countermeasure Technique Modeling and Simulation | WR | NSWC Crane : Crane, IN | 2.071 | 0.300 | Oct 2020 | 0.740 | Oct 2021 | 0.136 | Oct 2022 | - | | 0.136 | Continuing | Continuing | Continuing |
| Radio Frequency Countermeasures Modeling and Simulation | C/CPFF | Booz Allen Hamilton : McClean, VA | 0.101 | 0.000 | | 0.000 | | 0.422 | Jan 2023 | - | | 0.422 | Continuing | Continuing | Continuing |
| ALE-47 Common Carriage Sys Upgrade Dev Contract | C/FFP | BAE : Austin, TX | 0.000 | 0.000 | | 9.193 | Jun 2022 | 2.459 | Mar 2023 | - | | 2.459 | Continuing | Continuing | Continuing |
| ALE-47 Software Upgrades | WR | FRCSE : Jacksonville, FL | 0.000 | 0.000 | | 1.061 | Nov 2021 | 1.567 | Nov 2022 | - | | 1.567 | Continuing | Continuing | Continuing |
| ALE-47 Common Carriage System Upgrade Development | WR | Various : Various | 0.000 | 0.000 | | 2.679 | Nov 2021 | 1.042 | Nov 2022 | - | | 1.042 | Continuing | Continuing | Continuing |
| ALE-47 Common Carriage System Upgrade Development | WR | FRCSE : Jacksonville, FL | 0.000 | 0.000 | | 1.947 | Oct 2021 | 1.122 | Oct 2022 | - | | 1.122 | Continuing | Continuing | Continuing |
| ALE-47 Common Carriage A-Kit Design | WR | FRCSE : Jacksonville, FL | 0.000 | 0.000 | | 0.374 | Jun 2022 | 0.576 | Mar 2023 | - | | 0.576 | Continuing | Continuing | Continuing |
| ALE-47 Common Carriage Depot Update | MIPR | TBD : TBD | 0.000 | 0.000 | | 0.000 | | 0.265 | Dec 2022 | - | | 0.265 | Continuing | Continuing | Continuing |
| ALE-47 F/A-18 iASE Development | WR | NAWCWD : China Lake, CA | 0.000 | 0.000 | | 0.000 | | 16.510 | Oct 2022 | - | | 16.510 | Continuing | Continuing | Continuing |
| ALE-47 iASE Software Upgrade | WR | FRCSE : Jacksonville, FL | 0.000 | 0.000 | | 0.000 | | 1.438 | Oct 2022 | - | | 1.438 | Continuing | Continuing | Continuing |
| ALE-47 iASE A-Kit Design/ Drawing | WR | NAWCWD : China Lake, CA | 0.000 | 0.000 | | 0.000 | | 0.710 | Oct 2022 | - | | 0.710 | Continuing | Continuing | Continuing |
| ALE-47 iASE Human Factors | WR | NAWCAD : Patuxent River, MD | 0.000 | 0.000 | | 0.000 | | 0.137 | Jan 2023 | - | | 0.137 | Continuing | Continuing | Continuing |
| ALE-47 iASE User Training Package/Source Data Update | WR | Various : Various | 0.000 | 0.000 | | 0.000 | | 0.422 | Jan 2023 | - | | 0.422 | Continuing | Continuing | Continuing |
| ALE-47 iASE Development | WR | FRCSE : Jackonville | 0.000 | 0.000 | | 0.000 | | 0.955 | Oct 2022 | - | | 0.955 | Continuing | Continuing | Continuing |

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>3309 / *Assault Survivability Optimization* |

**Product Development ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ALE-47 iASE Depot Assessment/Standup | MIPR | Various : Various | 0.000 | 0.000 | | 0.000 | | 0.055 | Jan 2023 | - | | 0.055 | Continuing | Continuing | Continuing |
| Archive Product Development Efforts | Various | Various : Various | 1.409 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 1.409 | - |
| | | **Subtotal** | 3.581 | 0.300 | | 15.994 | | 27.816 | | - | | 27.816 | Continuing | Continuing | N/A |

**Remarks**

FY 2023 $27.816 million for organic government effort for F/A-18 Multi-Layered Obstructed Brokered Hub (MOB Hub) and integrated Aircraft Survivability Equipment (iASE) implementation and continue Engineering, Manufacturing and Development (EMD) contract to design and develop hardware and software solutions for USN aircraft Countermeasure Dispensing Systems and perform modeling and simulation to optimize Common Carriage countermeasures on USN aircraft platforms.

Common Carriage decrease of $8.405 million from FY 2022 to FY 2023 due to second year EMD effort for design and develop of hardware and software solutions for USN aircraft ALE-47 Countermeasure Dispensing Systems. Less funding required for second year EMD contract since first year used to initiate technical maturity for the entire program. Reduced funding level supports modeling and simulation decrease from four aircraft flight test events in FY 2022 to one flight test event in FY 2023.

FY 2022 EMD award (via Other Transaction Authority) changed from 1st quarter FY 2022 to 3rd quarter FY 2022 due to additional time required to release request for white papers and vendor submittal. Vendor selection completed in 2nd quarter FY2022.

F/A-18 MOB Hub iASE increase of $17.220 million from FY 2022 to FY 2023 for organic government effort (China Lake, CA) for iASE implementation to increase ALE-47 programmer capability for F/A-18 aircraft to include: hardware ($4.072M), software redesign and qualification ($7.874M), integration ($3.906M), A-kit Design/Drawing ($.710M), and system integrity ($.658M).

F/A-18 MOB Hub iASE increase of $3.007 million from FY 2022 to FY 2023 for organic government effort for iASE implementation to increase ALE-47 programmer capability for F/A-18 aircraft to include: development and software upgrade (Jacksonville, FL - $2.393M), iASE Human Factors (Patuxent River, MD - $.137M), User Training Package/ Source Data Update (various - $.477M).

**Support ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Test Mission Data File Software Development | WR | FRCSE : Jacksonville, FL | 0.453 | 0.000 | | 0.303 | Jan 2022 | 0.078 | Jan 2023 | - | | 0.078 | Continuing | Continuing | Continuing |
| ALE-47 Common Carriage Technical Support | WR | FRC : Various | 0.000 | 0.000 | | 0.418 | Oct 2021 | 0.454 | Oct 2022 | - | | 0.454 | Continuing | Continuing | Continuing |

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>3309 / *Assault Survivability Optimization* |

**Support ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ALE-47 iASE Cyber/ COMSEC/CPI Assessment | WR | Various : Various | 0.000 | 0.000 | | 0.000 | | 0.796 | Jan 2023 | - | | 0.796 | Continuing | Continuing | Continuing |
| ALE-47 iASE Logistics Supportability Assessment | WR | Various : Various | 0.000 | 0.000 | | 0.000 | | 0.425 | Jan 2023 | - | | 0.425 | Continuing | Continuing | Continuing |
| ALE-47 iASE Platform Integration Support | WR | FRCSW : San Diego, CA | 0.000 | 0.000 | | 0.000 | | 0.511 | Jan 2023 | - | | 0.511 | Continuing | Continuing | Continuing |
| ALE-47 iASE Development Support | Various | NAWCAD : Patuxent, MD | 0.000 | 0.000 | | 0.000 | | 0.796 | Jan 2023 | - | | 0.796 | Continuing | Continuing | Continuing |
| Archive Support Efforts | Various | Various : Various | 0.144 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 0.144 | - |
| | | **Subtotal** | 0.597 | 0.000 | | 0.721 | | 3.060 | | - | | 3.060 | Continuing | Continuing | N/A |

**Remarks**

FY 2023 $3.060 million for support for ALE-47 Countermeasure Dispensing Systems software design and development for F/A-18 MOB Hub iASE and to incorporate and dispense square form factor countermeasures on USN aircraft platforms to optimize Common Carriage countermeasures.

Common Carriage decrease of $0.189 million from FY 2022 to FY 2023 due to reduced technical support required in second year of Common Carriage development effort and decrease in number of test MDFs from four in FY 2022 to one in FY 2023.

F/A-18 MOB HUB iASE increase of $2.528 million from FY 2022 to FY 2023 for technical support for iASE implementation to increase ALE-47 programmer capability for F/A-18 aircraft to include: iASE Cyber/COMSEC/CPI Assessment, iASE Logistics Supportability Assessment, Platform Integration Support, iASE Development Support.

FY 2021 MDF funds re-aligned to support Common Carriage acquisition efforts. FY 2022 software development for F/A-18E/F and MH-60R/S test MDFs. FY 2023 costs include Cyber Security Assessment, Logistics Supportability Assessment, and engineering support for platform integration and test.

**Test and Evaluation ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ALE-47 Common Carriage Engineering | WR | FRCSE : Jacksonville, FL | 0.000 | 0.000 | | 1.152 | Oct 2021 | 0.591 | Oct 2022 | - | | 0.591 | Continuing | Continuing | Continuing |
| AECM Common Carriage Engineering | WR | FRCSE : Jacksonville, FL | 0.000 | 0.000 | | 0.254 | Oct 2021 | 0.216 | Oct 2022 | - | | 0.216 | Continuing | Continuing | Continuing |

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy | | | Date: April 2022 |
|---|---|---|---|
| Appropriation/Budget Activity<br>1319 / 5 | R-1 Program Element (Number/Name)<br>PE 0604270N / *Electronic Warfare (EW) Dev* | Project (Number/Name)<br>3309 / *Assault Survivability Optimization* | |

**Test and Evaluation ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ALE-47 Common Carriage Aircraft Qualification Planning | WR | NAWCAD : Patuxent River, MD | 0.000 | 0.000 | | 0.159 | Nov 2021 | 0.216 | Nov 2022 | - | | 0.216 | Continuing | Continuing | Continuing |
| AECM Qualification Test Units | C/FFP | Various : Various | 0.000 | 0.000 | | 0.339 | Feb 2022 | 0.000 | | - | | 0.000 | Continuing | Continuing | Continuing |
| F/A-18 Air to Air Flight Test | WR | NAWCWD : Pt Mugu, CA | 1.166 | 0.000 | | 1.343 | Jan 2022 | 0.000 | | - | | 0.000 | Continuing | Continuing | Continuing |
| F/A-18 Grd to Air Flight Test | WR | NAWCWD : Pt Mugu, CA | 0.000 | 0.000 | | 1.441 | Mar 2022 | 0.000 | | - | | 0.000 | Continuing | Continuing | Continuing |
| F/A-18 Grd to Air Chaff Flight Test | WR | NAWCAD : Patuxent River, MD | 0.000 | 0.000 | | 0.000 | | 1.134 | Jan 2023 | - | | 1.134 | Continuing | Continuing | Continuing |
| MH-60R/S Flight Test | WR | TBD : TBD | 0.000 | 0.000 | | 1.264 | Jan 2022 | 0.000 | | - | | 0.000 | Continuing | Continuing | Continuing |
| ALE-47 iASE Prototype A Kits | WR | NAWCWD : China Lake, CA | 0.000 | 0.000 | | 0.000 | | 0.318 | Oct 2022 | - | | 0.318 | Continuing | Continuing | Continuing |
| ALE-47 iASE F/A-18 AWIL Integration Test | WR | NAWCWD : China Lake, CA | 0.000 | 0.000 | | 0.000 | | 0.212 | Oct 2022 | - | | 0.212 | Continuing | Continuing | Continuing |
| ALE-47 iASE Ground and Flight Testing | WR | VX-21 : Patuxent River, MD | 0.000 | 0.000 | | 0.000 | | 0.157 | Mar 2023 | - | | 0.157 | Continuing | Continuing | Continuing |
| ALE-47 iASE A-Kit/B-Kit Prototype Install and Verification | WR | VX-21/31 : Various | 0.000 | 0.000 | | 0.000 | | 0.308 | Mar 2023 | - | | 0.308 | Continuing | Continuing | Continuing |
| ALE-47 iASE Test Planning | WR | COTF : Norfolk, VA | 0.000 | 0.000 | | 0.000 | | 0.245 | Mar 2023 | - | | 0.245 | Continuing | Continuing | Continuing |
| ALE-47 iASE Test Engineering and Logistics | WR | FRCSE : Jacksonville, FL | 0.000 | 0.000 | | 0.000 | | 0.270 | Jan 2023 | - | | 0.270 | Continuing | Continuing | Continuing |
| Archive Prior Year Test and Evaluation Efforts | Various | Various : Various | 5.909 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 5.909 | - |
| | | **Subtotal** | 7.075 | 0.000 | | 5.952 | | 3.667 | | - | | 3.667 | Continuing | Continuing | N/A |

**Remarks**

FY 2023 $3.667 million for Test and Evaluation (T&E) for F/A-18 MOB Hub iASE and advanced Common Carriage countermeasure dispense technique optimization flight test events: F/A-18E/F (ground-to-air).

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy | | | Date: April 2022 |
|---|---|---|---|
| Appropriation/Budget Activity<br>1319 / 5 | R-1 Program Element (Number/Name)<br>PE 0604270N / *Electronic Warfare (EW) Dev* | Project (Number/Name)<br>3309 / *Assault Survivability Optimization* | |

**Test and Evaluation ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Common Carriage decrease of $3.795 million from FY 2022 to FY 2023 due to second year Common Carriage reduced test and evaluation test requirements from four test events in FY 2022 to one test event in FY 2023.<br><br>F/A-18 MOB HUB iASE increase of $1.510 million from FY 2022 to FY 2023 for Test and Evaluation efforts for iASE implementation to increase ALE-47 programmer capability for F/A-18 aircraft to include: Prototype A Kits, A-Kit/B-Kit Prototype Install and Verification, Ground and Flight Testing, Test Planning and Engineering/Logistics.<br><br>FY 2021 developmental flight test funds re-aligned to support Common Carriage acquisition efforts. FY 2022 developmental flight test following modeling and simulation will optimize Infrared (IR) expendable countermeasure effectiveness for F/A-18E/F and MH-60R/S. AECM qualification Test Units are 1X1X8 expendable countermeasures test articles for optimization test flights and consist of 500ea MJU-77, 500ea MJU-76, 500ea MJU-78 and 1,000ea Chaff. FY 2023 incorporates test/integration efforts for F/A-18 ALE-47 MOB Hub iASE and F/A-18 radio frequency countermeasure (RFCM) chaff ground to air flight test. | | | | | | | | | | | | | | | |

**Management Services ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ALE-47 Project Management | WR | FRCSE : Jacksonville, FL | 0.337 | 0.466 | Oct 2020 | 0.728 | Oct 2021 | 2.028 | Oct 2022 | - | | 2.028 | Continuing | Continuing | Continuing |
| ALE-47 Project Management Support Services | C/CPFF | KBR : Jacksonville, FL | 0.000 | 0.000 | | 0.000 | | 0.425 | Dec 2022 | - | | 0.425 | Continuing | Continuing | Continuing |
| Advanced Countermeasure Dispense Technique Development Project Management | C/CPFF | Georgia Tech Applied Research Corporation : Atlanta, GA | 0.132 | 0.030 | Dec 2020 | 0.000 | | 0.062 | Dec 2022 | - | | 0.062 | Continuing | Continuing | Continuing |
| Archive Management Services Efforts | Various | Various : Various | 0.339 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 0.339 | - |
| | | **Subtotal** | 0.808 | 0.496 | | 0.728 | | 2.515 | | - | | 2.515 | Continuing | Continuing | N/A |

**Remarks**

FY 2023 $2.515 million for Air Expendable Countermeasures (AECM) and ALE-47 project management for MOB Hub iASE and Common Carriage System re-design and countermeasure technique optimization flight test events.

Management Services increase of $1.787 million from FY 2022 to FY 2023 due to MOB Hub iASE implementation to increase ALE-47 programmer capability for F/A-18 aircraft and to continue Common Carriage efforts.

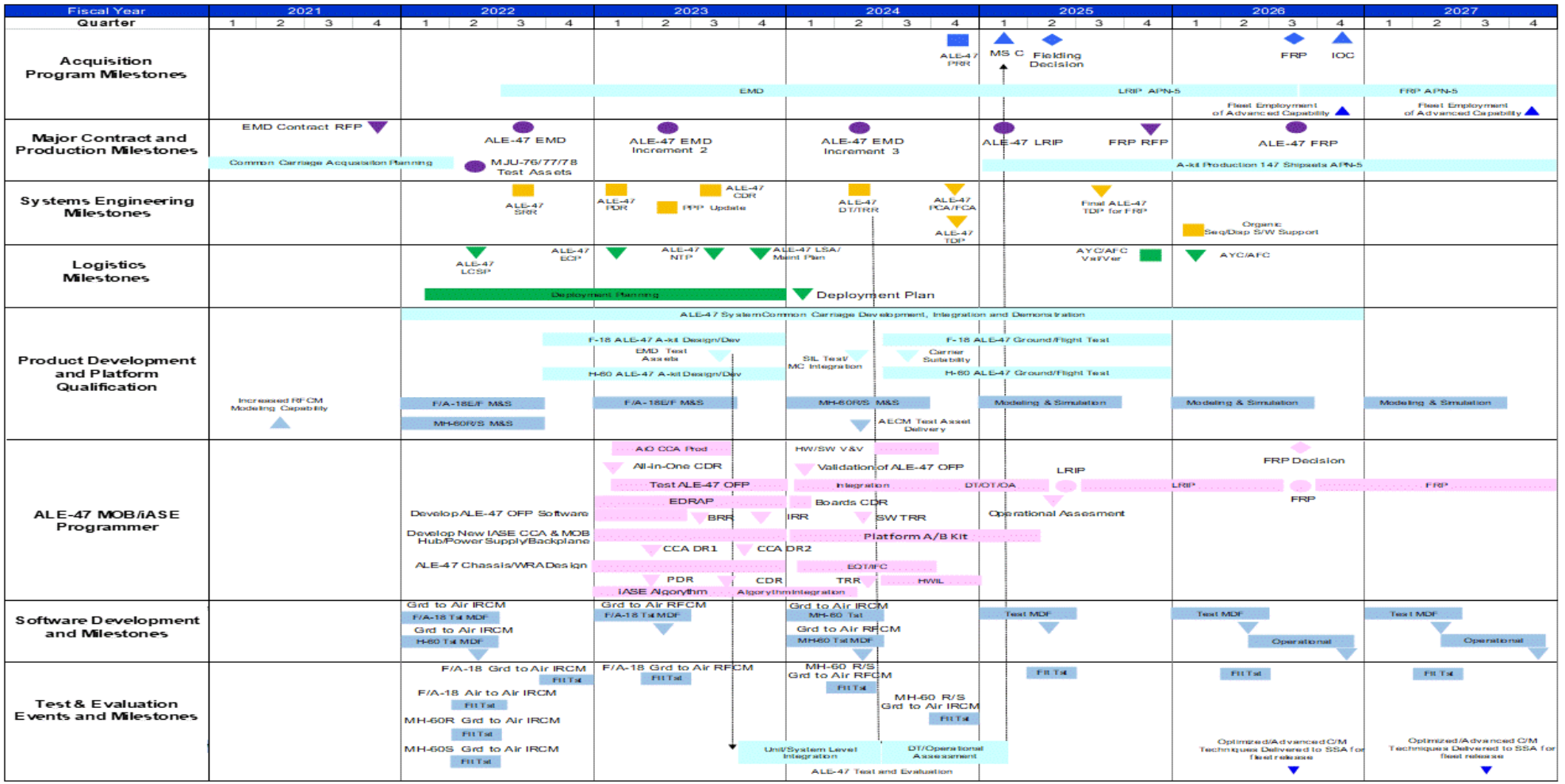
| Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy | | | Date: April 2022 |
|---|---|---|---|
| Appropriation/Budget Activity<br>1319 / 5 | R-1 Program Element (Number/Name)<br>PE 0604270N / *Electronic Warfare (EW) Dev* | Project (Number/Name)<br>3309 / *Assault Survivability Optimization* | |

| | Prior Years | FY 2021 | | FY 2022 | | FY 2023 Base | | FY 2023 OCO | | FY 2023 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Project Cost Totals** | 12.061 | 0.796 | | 23.395 | | 37.058 | | - | | 37.058 | Continuing | Continuing | N/A |

**Remarks**

FY 2023 $37.058 million to begin organic government effort for F/A-18 MOB Hub iASE upgrade of ALE-47 dispenser system and continue ALE-47 Common Carriage contract and associated organic engineering, logistic, test and project management efforts to implement ALE-47 Common Carriage solution and optimize square form factor countermeasures.

| Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>3309 / *Assault Survivability Optimization* |



| Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>3309 / *Assault Survivability Optimization* |

## Schedule Details

| | Start | | End | |
|---|---|---|---|---|
| **Events by Sub Project** | **Quarter** | **Year** | **Quarter** | **Year** |
| ***Assault Survivability Optimization*** | | | | |
| Acquisition Program and Major Contract Milestones: ALE-47 System Engineering and Manufacturing Development (EMD) Contract Award | 3 | 2022 | 3 | 2022 |
| Acquisition Program and Major Contract Milestones: ALE-47 EMD Contract Award Increment 2 | 2 | 2023 | 2 | 2023 |
| Acquisition Program and Major Contract Milestones: ALE-47 EMD Contract Award Increment 3 | 2 | 2024 | 2 | 2024 |
| Acquisition Program and Major Contract Milestones: MJU-76/77/78 Test Assets Award | 2 | 2022 | 2 | 2022 |
| Acquisition Program and Major Contract Milestones: ALE-47 Production Readiness Review (PRR) | 4 | 2024 | 4 | 2024 |
| Acquisition Program and Major Contract Milestones: Common Carriage Milestone C | 1 | 2025 | 1 | 2025 |
| Acquisition Program and Major Contract Milestones: ALE-47 Low Rate Initial Production (LRIP) Award APN-5 | 1 | 2025 | 1 | 2025 |
| Acquisition Program and Major Contract Milestones: ALE-47 Common Carriage Fielding Decision | 2 | 2025 | 2 | 2025 |
| Acquisition Program and Major Contract Milestones: Full Rate Production Decision | 3 | 2026 | 3 | 2026 |
| Acquisition Program and Major Contract Milestones: ALE-47 Full Rate Production (FRP) Award APN-5 | 3 | 2026 | 3 | 2026 |
| Acquisition Program and Major Contract Milestones: ALE-47 Common Carriage Initial Operational Capability | 4 | 2026 | 4 | 2026 |
| Acquisition Program and Major Contract Milestones: FY26 Fleet Employment of Advanced Capability | 4 | 2026 | 4 | 2026 |
| Acquisition Program and Major Contract Milestones: FY27 Fleet Employment of Advanced Capability | 4 | 2027 | 4 | 2027 |
| Systems Engineering Milestones: ALE-47 System Requirements Review (SRR) | 3 | 2022 | 3 | 2022 |

| Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>3309 / *Assault Survivability Optimization* |

| | Start | | End | |
|---|---|---|---|---|
| **Events by Sub Project** | **Quarter** | **Year** | **Quarter** | **Year** |
| Systems Engineering Milestones: ALE-47 Preliminary Design Review (PDR) | 1 | 2023 | 1 | 2023 |
| Systems Engineering Milestones: ALE-47 Program Protection Plan Update (PPP) | 2 | 2023 | 2 | 2023 |
| Systems Engineering Milestones: ALE-47 Crititcal Design Review (CDR) | 3 | 2023 | 3 | 2023 |
| Systems Engineering Milestones: ALE-47 Developmental Test (DT)/Test Readiness Review (TRR) | 2 | 2024 | 2 | 2024 |
| Systems Engineering Milestones: Technical Data Package to Support Production | 3 | 2025 | 3 | 2025 |
| Logistics Milestones: ALE-47 Life Cycle Sustainment Plan (LCSP) | 2 | 2022 | 2 | 2022 |
| Logistics Milestones: ALE-47 Engineering Change Proposal (ECP) | 1 | 2023 | 1 | 2023 |
| Logistics Milestones: ALE-47 Logistic Support Analysis (LSA)/Maintenance Plan | 4 | 2023 | 4 | 2023 |
| Logistics Milestones: Common Carriage Deployment Plan | 1 | 2024 | 1 | 2024 |
| Logistics Milestones: ALE-47 Avionics/Airframe Change Verification | 4 | 2025 | 4 | 2025 |
| Logistics Milestones: ALE-47 Avionics/Airframe Change | 1 | 2026 | 1 | 2026 |
| Product Development and Platform Qualification: Increased RFCM Modeling Capability | 2 | 2021 | 2 | 2021 |
| Product Development and Platform Qualification: Delivery ALE-47 Test Assets | 3 | 2023 | 3 | 2023 |
| Product Development and Platform Qualification: System Integration Lab (SIL) Test/ Mission Computer (MC) Integration | 2 | 2024 | 2 | 2024 |
| Product Development and Platform Qualification: Delivery of MJU-76/77/78 and RFCM Test Assets | 2 | 2024 | 2 | 2024 |
| Product Development and Platform Qualification: ALE-47 Common Carriage Carrier Suitability | 3 | 2024 | 3 | 2024 |
| ALE-47 Multi-Layered Obstructed Brokered Hub (MOB Hub)/integrated Aircraft Survivability Equipment (iASE) Programmer: iASE All-In-One CDR | 1 | 2023 | 1 | 2023 |
| ALE-47 Multi-Layered Obstructed Brokered Hub (MOB Hub)/integrated Aircraft Survivability Equipment (iASE) Programmer: iASE Circuit Card Assembly (CCA) Design Review (DR) 1 | 2 | 2023 | 2 | 2023 |
| ALE-47 Multi-Layered Obstructed Brokered Hub (MOB Hub)/integrated Aircraft Survivability Equipment (iASE) Programmer: iASE PDR | 2 | 2023 | 2 | 2023 |

| Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>3309 / *Assault Survivability Optimization* |

| | Start | | End | |
|---|---|---|---|---|
| **Events by Sub Project** | **Quarter** | **Year** | **Quarter** | **Year** |
| ALE-47 Multi-Layered Obstructed Brokered Hub (MOB Hub)/integrated Aircraft Survivability Equipment (iASE) Programmer: iASE Bandwidth Requirements Review (BRR) | 3 | 2023 | 3 | 2023 |
| ALE-47 Multi-Layered Obstructed Brokered Hub (MOB Hub)/integrated Aircraft Survivability Equipment (iASE) Programmer: iASE CDR | 3 | 2023 | 3 | 2023 |
| ALE-47 Multi-Layered Obstructed Brokered Hub (MOB Hub)/integrated Aircraft Survivability Equipment (iASE) Programmer: iASE CCA DR2 | 4 | 2023 | 4 | 2023 |
| ALE-47 Multi-Layered Obstructed Brokered Hub (MOB Hub)/integrated Aircraft Survivability Equipment (iASE) Programmer: iASE Integration Readiness Review (IRR) | 4 | 2023 | 4 | 2023 |
| ALE-47 Multi-Layered Obstructed Brokered Hub (MOB Hub)/integrated Aircraft Survivability Equipment (iASE) Programmer: iASE Software (SW) TRR | 2 | 2024 | 2 | 2024 |
| ALE-47 Multi-Layered Obstructed Brokered Hub (MOB Hub)/integrated Aircraft Survivability Equipment (iASE) Programmer: iASE TRR | 2 | 2024 | 2 | 2024 |
| ALE-47 Multi-Layered Obstructed Brokered Hub (MOB Hub)/integrated Aircraft Survivability Equipment (iASE) Programmer: iASE Operational Assessment (OA) | 2 | 2025 | 2 | 2025 |
| ALE-47 Multi-Layered Obstructed Brokered Hub (MOB Hub)/integrated Aircraft Survivability Equipment (iASE) Programmer: iASE LRIP Contract | 2 | 2025 | 2 | 2025 |
| ALE-47 Multi-Layered Obstructed Brokered Hub (MOB Hub)/integrated Aircraft Survivability Equipment (iASE) Programmer: iASE FRP Decision | 3 | 2026 | 3 | 2026 |
| ALE-47 Multi-Layered Obstructed Brokered Hub (MOB Hub)/integrated Aircraft Survivability Equipment (iASE) Programmer: iASE FRP Contract | 3 | 2026 | 3 | 2026 |
| Software Development And Milestones: FY22 Test Mission Data Files | 2 | 2022 | 2 | 2022 |
| Software Development And Milestones: FY23 Test Mission Data Files | 2 | 2023 | 2 | 2023 |
| Software Development And Milestones: FY24 Test Mission Data Files | 2 | 2024 | 2 | 2024 |
| Software Development And Milestones: FY25 Test Mission Data Files | 2 | 2025 | 2 | 2025 |
| Software Development And Milestones: FY26 Test Mission Data Files | 2 | 2026 | 2 | 2026 |
| Software Development And Milestones: FY26 Operational MDF | 4 | 2026 | 4 | 2026 |
| Software Development And Milestones: FY27 Test Mission Data Files | 2 | 2027 | 2 | 2027 |

| Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>3309 / *Assault Survivability Optimization* |

| | Start | | End | |
|---|---|---|---|---|
| **Events by Sub Project** | **Quarter** | **Year** | **Quarter** | **Year** |
| Software Development And Milestones: FY27 Operational MDF | 4 | 2027 | 4 | 2027 |
| Test and Evaluation Events and Milestones: FY22 Flight Test F/A-18 Air to Air IRCM | 2 | 2022 | 2 | 2022 |
| Test and Evaluation Events and Milestones: FY22 Flight Test MH-60R/S Grd to Air IRCM | 2 | 2022 | 2 | 2022 |
| Test and Evaluation Events and Milestones: FY22 Flight Test F/A-18 Grd to Air IRCM | 4 | 2022 | 4 | 2022 |
| Test and Evaluation Events and Milestones: FY23 Flight Test F/A-18 Grd to Air RFCM | 2 | 2023 | 2 | 2023 |
| Test and Evaluation Events and Milestones: FY24 Flight Test MH-60R/S Grd to Air RFCM | 2 | 2024 | 2 | 2024 |
| Test and Evaluation Events and Milestones: FY24 Flight Test MH-60R/S Grd to Air IRCM | 4 | 2024 | 4 | 2024 |
| Test and Evaluation Events and Milestones: FY25 Flight Test | 2 | 2025 | 2 | 2025 |
| Test and Evaluation Events and Milestones: FY26 Flight Test | 2 | 2026 | 2 | 2026 |
| Test and Evaluation Events and Milestones: FY27 Flight Test | 2 | 2027 | 2 | 2027 |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy | | | Date: April 2022 |
|---|---|---|---|
| Appropriation/Budget Activity<br>1319 / 5 | R-1 Program Element (Number/Name)<br>PE 0604270N / *Electronic Warfare (EW) Dev* | Project (Number/Name)<br>3327 / *MAGTF EW Aviation Development* | |

| COST ($ in Millions) | Prior Years | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total | FY 2024 | FY 2025 | FY 2026 | FY 2027 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3327: *MAGTF EW Aviation Development* | 59.601 | 9.846 | 12.026 | 15.121 | - | 15.121 | 14.744 | 15.047 | 15.351 | 15.856 | Continuing | Continuing |
| Quantity of RDT&E Articles | | - | - | - | - | - | - | - | - | - | | |

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

This project unit supports the United States Marine Corps (USMC) development of Marine Air Ground Task Force (MAGTF) Electronic Warfare (EW) and the various elements of its distributed System of Systems (SoS). The SoS addresses MAGTF EW sufficiency gaps in the areas of Electronic Attack (EA), EW Support (ES), and Electronic Protection with a multitude of payloads designed for carriage on a variety of organic MAGTF air assets. Payload development plans follow an adaptable, modular and open architecture philosophy to combat the increasing capability gap and enable future growth at a reduced operational and sustainment cost. A key element to this capability is the AN/ALQ-231(V) Intrepid Tiger II program.

The AN/ALQ-231(V)1 pod is the variant of the Intrepid Tiger II pod flown on the AV-8B, F/A-18A-D, and KC-130J platforms. The AN/ALQ-231(V)3 is the variant of the Intrepid Tiger II pod flown on the UH-1Y platform, with plans for future integration on AH-1 platforms. Plans include future integration of AN /ALQ-231(V) Block X advanced capability and counter-radar upgrades on USMC tilt rotor, fixed wing, rotary wing and unmanned aircraft. The AN/ALQ-231(V)4 is the first implementation of Block X upgrades on MV-22B aircraft. All payload variants are capable of conducting, supporting, and coordinating Electro-Magnetic Spectrum (EMS) operations in the form of EA and ES against Irregular Warfare threats. Additionally, all payloads are scalable and adaptable for emerging threats and are interoperable with the USMC's Electronic Warfare Services Architecture (EWSA). The Intrepid Tiger II capability is designed to be integrated for MAGTF tactical coordination of cyberspace and EW operations via the Cyber Electronic Warfare Coordination Cell (CEWCC).

| B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each) | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total |
|---|---|---|---|---|---|
| ***Title:*** Intrepid Tiger II (AN/ALQ-231) | 9.846 | 12.026 | 15.121 | 0.000 | 15.121 |
| ***Articles:*** | - | - | - | - | - |
| ***Description:*** The program will develop, mature, and test Intrepid Tiger II based solutions to radar threats in support of the penetrating jammer mission with plans to release variants of the AN/ALQ-231(V) BLK X Radar Jammer for use on the MV-22, AV-8B, and F/A-18C/D platforms, as well as for future use on the C-130 and other USMC fixed wing, rotary wing, and unmanned aircraft. | | | | | |
| ***FY 2022 Plans:***<br>FY 2022 efforts include completion and final reporting on Operational Test (OT) of AN/ALQ-231(V)4 payload on MV-22B. Additionally, Developmental Testing of both hardware and software for the payload variant of BLK X | | | | | |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>3327 / *MAGTF EW Aviation Development* |

| B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each) | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total |
|---|---|---|---|---|---|
| on KC-130J will commence. Continued development of the EWSA in support of evolving Intrepid Tiger II target sets and missions.<br>***FY 2023 Base Plans:***<br>FY 2023 efforts include completion and final reporting of hardware and software Developmental Test (DT) on KC-130J in addition to technology evaluation and prototype development of the follow-on platform integration solution for BLK X. Continued development of EWSA in support of evolving Intrepid Tiger II target sets and missions.<br>***FY 2023 OCO Plans:***<br>N/A<br>***FY 2022 to FY 2023 Increase/Decrease Statement:***<br>Funding increases from FY2022 to FY2023 due to commencement of technology development and design activities for follow-on hardware development and platform integration of BLK X. | | | | | |
| **Accomplishments/Planned Programs Subtotals** | 9.846 | 12.026 | 15.121 | 0.000 | 15.121 |

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

| Line Item | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total | FY 2024 | FY 2025 | FY 2026 | FY 2027 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|
| • APN/0587: *MAGTF EW For Aviation* | 26.822 | 29.151 | 24.684 | - | 24.684 | 25.187 | 25.687 | 26.193 | 26.715 | 52.640 | 406.132 |

**Remarks**

**D. Acquisition Strategy**

This project unit is part of USMC led efforts to ensure Marine Corps requirements are included in the budget process for the Future Year Defense Program and beyond. These efforts include AN/ALQ-231(V) Intrepid Tiger II Family of Systems, Collaborative Electronic Warfare (EW)/EW Battle Management, and EW Service Architecture (EWSA). These programs are the Marine Corps' initial steps to create systems to distribute EW capability across the battlespace.

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy | | | Date: April 2022 |
|---|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>3327 / *MAGTF EW Aviation Development* | |

**Product Development ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Intrepid Tiger BLK X Hardware Development | WR | NAWCWD : Point Mugu, CA | 15.823 | 2.386 | Nov 2020 | 1.388 | Nov 2021 | 5.726 | Nov 2022 | - | | 5.726 | Continuing | Continuing | Continuing |
| Systems Engineering | WR | NAWCAD : Patuxent River, MD | 3.913 | 0.514 | Nov 2020 | 0.547 | Nov 2021 | 1.326 | Nov 2022 | - | | 1.326 | Continuing | Continuing | Continuing |
| Systems Engineering | WR | NAWCWD : Point Mugu, CA | 30.195 | 4.258 | Nov 2020 | 5.622 | Nov 2021 | 5.734 | Nov 2022 | - | | 5.734 | Continuing | Continuing | Continuing |
| Prior Year Prod Dev no longer funded in FYDP | Various | Various : Various | 0.007 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 0.007 | - |
| | | **Subtotal** | 49.938 | 7.158 | | 7.557 | | 12.786 | | - | | 12.786 | Continuing | Continuing | N/A |

**Remarks**

Funding increases from FY 2022 to FY 2023 due to design activities for BLK X hardware/prototype development and integration solutions on follow-on platforms.

**Support ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Eng & Tech Services | Various | Various : Various | 1.403 | 0.319 | Nov 2020 | 0.279 | Nov 2021 | 0.285 | Nov 2022 | - | | 0.285 | Continuing | Continuing | Continuing |
| Prior year Support no longer funded in FYDP | Various | Various : Various | 0.430 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | Continuing | Continuing | Continuing |
| | | **Subtotal** | 1.833 | 0.319 | | 0.279 | | 0.285 | | - | | 0.285 | Continuing | Continuing | N/A |

**Test and Evaluation ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Intrepid Tiger BLK X Testing | WR | NAWCAD : Patuxent River, MD | 1.665 | 1.133 | Nov 2020 | 1.142 | Nov 2021 | 0.900 | Nov 2022 | - | | 0.900 | Continuing | Continuing | Continuing |
| Intrepid Tiger BLK X Testing | WR | NAWCWD : Point Mugu, CA | 5.751 | 1.209 | Nov 2020 | 2.661 | Nov 2021 | 1.000 | Nov 2022 | - | | 1.000 | Continuing | Continuing | Continuing |

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>3327 / *MAGTF EW Aviation Development* |

**Test and Evaluation ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Intrepid Tiger BLK X Testing | Various | Various : Various | 0.364 | 0.021 | Nov 2020 | 0.379 | Nov 2021 | 0.142 | Nov 2022 | - | | 0.142 | Continuing | Continuing | Continuing |
| | | **Subtotal** | 7.780 | 2.363 | | 4.182 | | 2.042 | | - | | 2.042 | Continuing | Continuing | N/A |

**Remarks**

Funding decreases from FY 2022 to FY 2023 as BLK X V(4) completes OT in FY22 and program transitions to DT on BLK X C-130 variant.

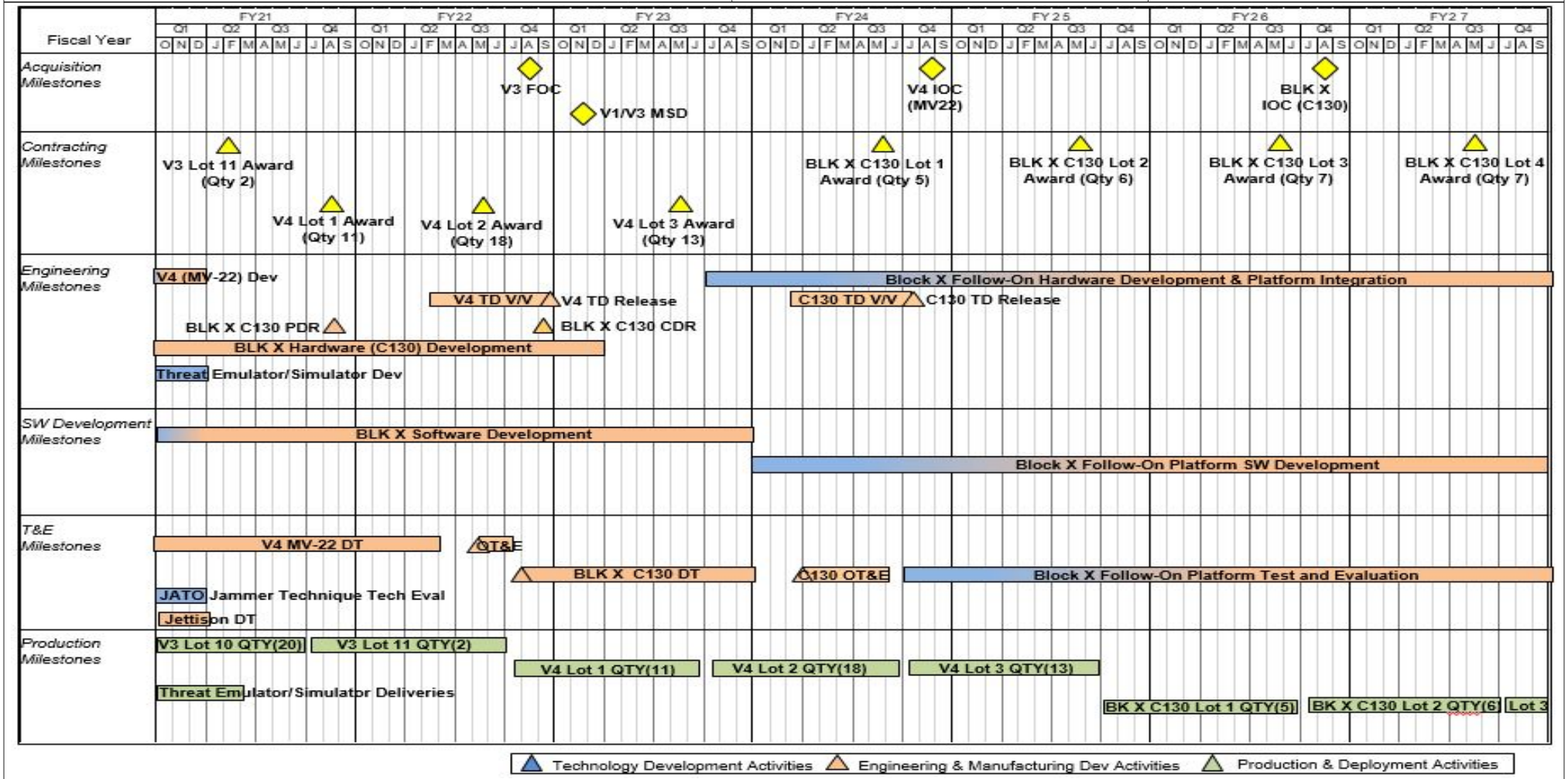
**Management Services ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Travel | Various | Various : Various | 0.050 | 0.006 | Oct 2020 | 0.008 | Oct 2021 | 0.008 | Nov 2022 | - | | 0.008 | Continuing | Continuing | Continuing |
| | | **Subtotal** | 0.050 | 0.006 | | 0.008 | | 0.008 | | - | | 0.008 | Continuing | Continuing | N/A |

| | Prior Years | FY 2021 | | FY 2022 | | FY 2023 Base | | FY 2023 OCO | | FY 2023 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Project Cost Totals** | 59.601 | 9.846 | | 12.026 | | 15.121 | | - | | 15.121 | Continuing | Continuing | N/A |

**Remarks**

| Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>3327 / *MAGTF EW Aviation Development* |



| Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>3327 / *MAGTF EW Aviation Development* |

## Schedule Details

| | Start | | End | |
|---|---|---|---|---|
| **Events by Sub Project** | **Quarter** | **Year** | **Quarter** | **Year** |
| ***Intrepid Tiger II (AN/ALQ-231)*** | | | | |
| Engineering Milestones: AN/ALQ-231(V)4 TD Fleet Release | 4 | 2022 | 4 | 2022 |
| Engineering Milestones: AN/ALQ-231(V)1 BLK X C-130 TD Fleet Release | 4 | 2024 | 4 | 2024 |
| Systems Development: AN/ALQ-231(V)1 BLK X C-130 Hardware Development | 1 | 2021 | 1 | 2023 |
| Systems Development: AN/ALQ-231(V)1 BLK X Software Development | 1 | 2021 | 4 | 2023 |
| Systems Development: BLK X Follow-On Hardware Development & Platform Integration | 4 | 2023 | 4 | 2027 |
| Systems Development: AN/ALQ-231(V)4 MV-22 Development | 1 | 2021 | 1 | 2021 |
| Systems Development: BLK X Follow-On Software Development | 1 | 2024 | 4 | 2027 |
| Test & Evaluation: AN/ALQ-231(V)4 MV-22 Developmental Test | 1 | 2021 | 2 | 2022 |
| Test & Evaluation: AN/ALQ-231(V)4 OT&E | 3 | 2022 | 4 | 2022 |
| Test & Evaluation: AN/ALQ-231(V)1 BLK X C-130 Developmental Test | 4 | 2022 | 4 | 2023 |
| Test & Evaluation: AN/ALQ-231(V)1 BLK X C-130 OT&E | 2 | 2024 | 3 | 2024 |
| Test & Evaluation: BLK X Follow-On Test and Evaluation | 4 | 2024 | 4 | 2027 |
| ***Production Milestones*** | | | | |
| AN/ALQ-231(V)3 Production Lot 11 (Qty 2) | 2 | 2021 | 2 | 2021 |
| AN/ALQ-231(V)4 Production Lot 1 (Qty 11) | 4 | 2021 | 4 | 2021 |
| AN/ALQ-231(V)4 Production Lot 2 (Qty 18) | 3 | 2022 | 3 | 2022 |
| AN/ALQ-231(V)4 Production Lot 3 (Qty 13) | 3 | 2023 | 3 | 2023 |
| AN/ALQ-231(V)1 BLK X C-130 Production Lot 1 (Qty 5) | 3 | 2024 | 3 | 2024 |
| AN/ALQ-231(V)1 BLK X C-130 Production Lot 2 (Qty 6) | 3 | 2025 | 3 | 2025 |
| AN/ALQ-231(V)1 BLK X C-130 Production Lot 3 (Qty 7) | 3 | 2026 | 3 | 2026 |

| Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>3327 / *MAGTF EW Aviation Development* |

| | Start | | End | |
|---|---|---|---|---|
| **Events by Sub Project** | **Quarter** | **Year** | **Quarter** | **Year** |
| AN/ALQ-231(V)1 BLK X C-130 Production Lot 4 (Qty 7) | 3 | 2027 | 3 | 2027 |
| Deliveries: AN/ALQ-231(V)3 Lot 10 Deliveries (Qty 20) | 1 | 2021 | 3 | 2021 |
| Deliveries: AN/ALQ-231(V)3 Lot 11 Deliveries (Qty 2) | 4 | 2021 | 3 | 2022 |
| Deliveries: AN/ALQ-231(V)4 Lot 1 Deliveries (Qty 11) | 4 | 2022 | 3 | 2023 |
| Deliveries: AN/ALQ-231(V)4 Lot 2 Deliveries (Qty 18) | 4 | 2023 | 3 | 2024 |
| Deliveries: AN/ALQ-231(V)4 Lot 3 Deliveries (Qty 13) | 4 | 2024 | 3 | 2025 |
| Deliveries: AN/ALQ-231(V)1 BLK X C-130 Production Lot 1 (Qty 5) | 4 | 2025 | 3 | 2026 |
| Deliveries: AN/ALQ-231(V)1 BLK X C-130 Production Lot 2 (Qty 6) | 4 | 2026 | 3 | 2027 |
| Deliveries: AN/ALQ-231(V)1 BLK X C-130 Production Lot 3 (Qty 7) | 4 | 2027 | 4 | 2027 |
| ***MAGTF EW Jammer Techniques Development*** | | | | |
| Systems Development: Threat Emulator / Simulator Development | 1 | 2021 | 1 | 2021 |
| Test & Evaluation: Jammer Techniques Technical Evaluation | 1 | 2021 | 1 | 2021 |
| Test & Evaluation: Jettison Developmental Test | 1 | 2021 | 1 | 2021 |
| Deliveries: Threat Emulator / Simulator Delivery | 1 | 2021 | 2 | 2021 |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy | | | Date: April 2022 |
|---|---|---|---|
| Appropriation/Budget Activity<br>1319 / 5 | R-1 Program Element (Number/Name)<br>PE 0604270N / *Electronic Warfare (EW) Dev* | Project (Number/Name)<br>3371 / *MAGTF EW Interoperability Development* | |

| COST ($ in Millions) | Prior Years | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total | FY 2024 | FY 2025 | FY 2026 | FY 2027 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3371: *MAGTF EW Interoperability Development* | 4.045 | 1.170 | 0.000 | 0.000 | - | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 5.215 |
| Quantity of RDT&E Articles | | - | - | - | - | - | - | - | - | - | | |

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

This project unit supports the United States Marine Corps air-ground interoperability by providing a variety of capabilities through multiple functions of the Software Reprogrammable Payload (SRP) when installed aboard SRP-capable aircraft. The spiral development plans allow adaptable, scalable, and open architecture philosophy to reduce stove-pipe solutions but enable future growth at a reduced operational and sustainment cost.

| B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each) | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total |
|---|---|---|---|---|---|
| ***Title:*** Software Reprogrammable Payload | 1.170 | 0.000 | 0.000 | 0.000 | 0.000 |
| ***Articles:*** | - | - | - | - | - |
| ***FY 2022 Plans:***<br>N/A | | | | | |
| ***FY 2023 Base Plans:***<br>N/A | | | | | |
| ***FY 2023 OCO Plans:***<br>N/A | | | | | |
| **Accomplishments/Planned Programs Subtotals** | 1.170 | 0.000 | 0.000 | 0.000 | 0.000 |

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

N/A

**Remarks**

**D. Acquisition Strategy**

This project unit is part of United States Marine Corps led efforts to ensure Marine Corps requirements are included in the budget process for the Future Year Defense Program and beyond. This effort is for the Software Reprogrammable Payload. This program is part of the Marine Corps initial steps to create a common interoperable system to distribute multiple data types across the battle-space through spiral development.

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy | | | Date: April 2022 |
|---|---|---|---|
| Appropriation/Budget Activity<br>1319 / 5 | R-1 Program Element (Number/Name)<br>PE 0604270N / *Electronic Warfare (EW) Dev* | Project (Number/Name)<br>3371 / *MAGTF EW Interoperability Development* | |

**Product Development ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Systems Engineering | WR | NAWCAD : Patuxent River, MD | 1.721 | 0.406 | Nov 2020 | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 2.127 | 2.127 |
| Systems Engineering | WR | NRL : Washington, DC | 0.509 | 0.225 | Dec 2020 | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 0.734 | 0.734 |
| Systems Engineering | C/CPFF | Assurance Technology Corp : Carlisle, MA | 1.154 | 0.241 | Dec 2020 | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 1.395 | 1.395 |
| Systems Engineering | C/CPFF | DCS : Alexandria, VA | 0.661 | 0.298 | Nov 2020 | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 0.959 | 0.959 |
| | | **Subtotal** | 4.045 | 1.170 | | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 5.215 | N/A |

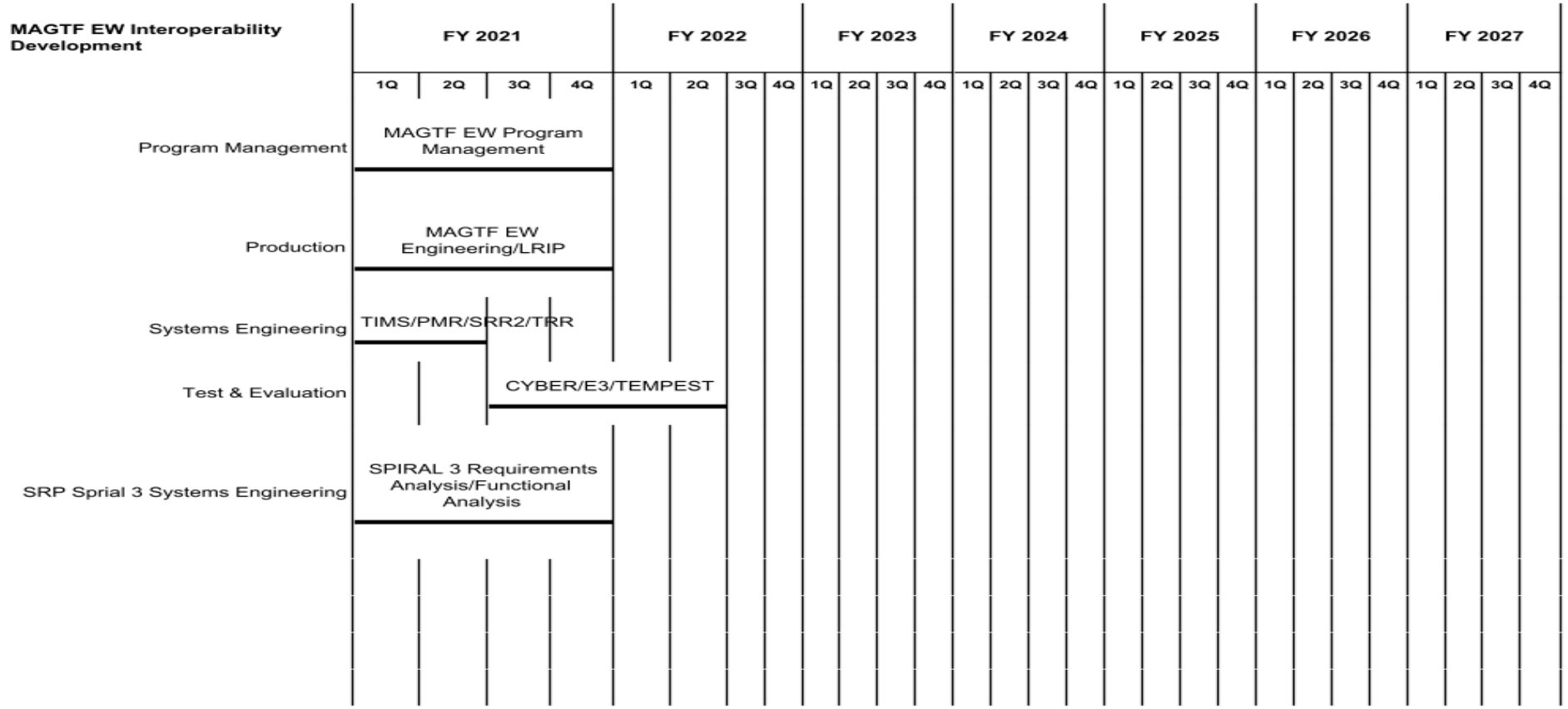
**Remarks**

FY22 decrease of -1.189 is due to the NAVAIR Mission Aligned Organization realignment and the Marine Air Ground Task Force funds were realigned to PE 0605217N PU 0572.

| | Prior Years | FY 2021 | | FY 2022 | | FY 2023 Base | | FY 2023 OCO | | FY 2023 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Project Cost Totals** | 4.045 | 1.170 | | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 5.215 | N/A |

**Remarks**

| Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>3371 / *MAGTF EW Interoperability Development* |




*2023DON - 0604270N - 3371*

| Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>3371 / *MAGTF EW Interoperability Development* |

## Schedule Details

| | Start | | End | |
|---|---|---|---|---|
| **Events by Sub Project** | **Quarter** | **Year** | **Quarter** | **Year** |
| ***MAGTF EW Interoperability Development*** | | | | |
| Program Management: MAGTF EW Program Management | 1 | 2021 | 4 | 2021 |
| Production: MAGTF EW Engineering/LRIP | 1 | 2021 | 4 | 2021 |
| Systems Engineering: TIMS/PMR/SRR2/TRR | 1 | 2021 | 2 | 2021 |
| Test & Evaluation: CYBER/E3/TEMPEST | 3 | 2021 | 2 | 2022 |
| SRP Sprial 3 Systems Engineering: SPIRAL 3 Requirements Analysis/Functional Analysis | 1 | 2021 | 4 | 2021 |

| Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy | | | Date: April 2022 |
|---|---|---|---|
| Appropriation/Budget Activity<br>1319 / 5 | R-1 Program Element (Number/Name)<br>PE 0604270N / *Electronic Warfare (EW) Dev* | Project (Number/Name)<br>9999 / *Congressional Adds* | |

| COST ($ in Millions) | Prior Years | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total | FY 2024 | FY 2025 | FY 2026 | FY 2027 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9999: *Congressional Adds* | 0.000 | 10.619 | 0.000 | 0.000 | - | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 10.619 |
| Quantity of RDT&E Articles | | - | - | - | - | - | - | - | - | - | | |

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

This Congressional Add project unit C622 supports the United States Marine Corps (USMC) Marine Air Ground Task Force (MAGTF) Electronic Warfare (EW) AN/ALQ-231(V) Intrepid Tiger II (IT II) efforts in the following areas:

1)Development of the Electronic Warfare Services Architecture (EWSA) to accelerate the development of a secure, extensible data exchange and hardware protocol to connect IT II payloads with other Signal Intelligence (SIGINT) systems, and facilitate integration of IT II with the Marine Corps Enterprise Network (MCEN).

2)Transition and integration of advanced digital payload EW technology developed by Office of Naval Research (ONR) Future Naval Capabilities (FNC) into IT II payloads to enhance organic cyberspace operations and EW capabilities to disrupt/deny/destroy adversary systems.

3)Investigate and model state-of-the-art jamming techniques and tactics for use on IT II payloads to keep pace with evolving and migrating EW threats on the battlefield.

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2021 | FY 2022 |
|---|---|---|
| ***Congressional Add:*** Intrepid Tiger II | 10.619 | 0.000 |
| ***FY 2021 Accomplishments:*** 1)Development of the Electronic Warfare Services Architecture (EWSA) to accelerate the development of a secure, extensible data exchange and hardware protocol to connect IT II payloads with other Signal Intelligence (SIGINT) systems, and facilitate integration of IT II with the Marine Corps Enterprise Network (MCEN).<br>2)Transition and integration of advanced digital payload EW technology developed by Office of Naval Research (ONR) Future Naval Capabilities (FNC) into IT II payloads to enhance organic cyberspace operations and EW capabilities to disrupt/deny/destroy adversary systems.<br>3)Investigate and model state-of-the-art jamming techniques and tactics for use on IT II payloads to keep pace with evolving and migrating EW threats on the battlefield. | | |
| ***FY 2022 Plans:*** N/A | | |
| **Congressional Adds Subtotals** | 10.619 | 0.000 |

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

N/A

| Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>9999 / *Congressional Adds* |

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

**Remarks**

**D. Acquisition Strategy**

Congressional Add project unit C622 funds the development of Electronic Warfare Services Architecture (EWSA), the transition/integration of advanced digital payloads into the IT II system, and IT II related jammer technique development efforts.

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy | | | Date: April 2022 |
|---|---|---|---|
| Appropriation/Budget Activity<br>1319 / 5 | R-1 Program Element (Number/Name)<br>PE 0604270N / *Electronic Warfare (EW) Dev* | Project (Number/Name)<br>9999 / *Congressional Adds* | |

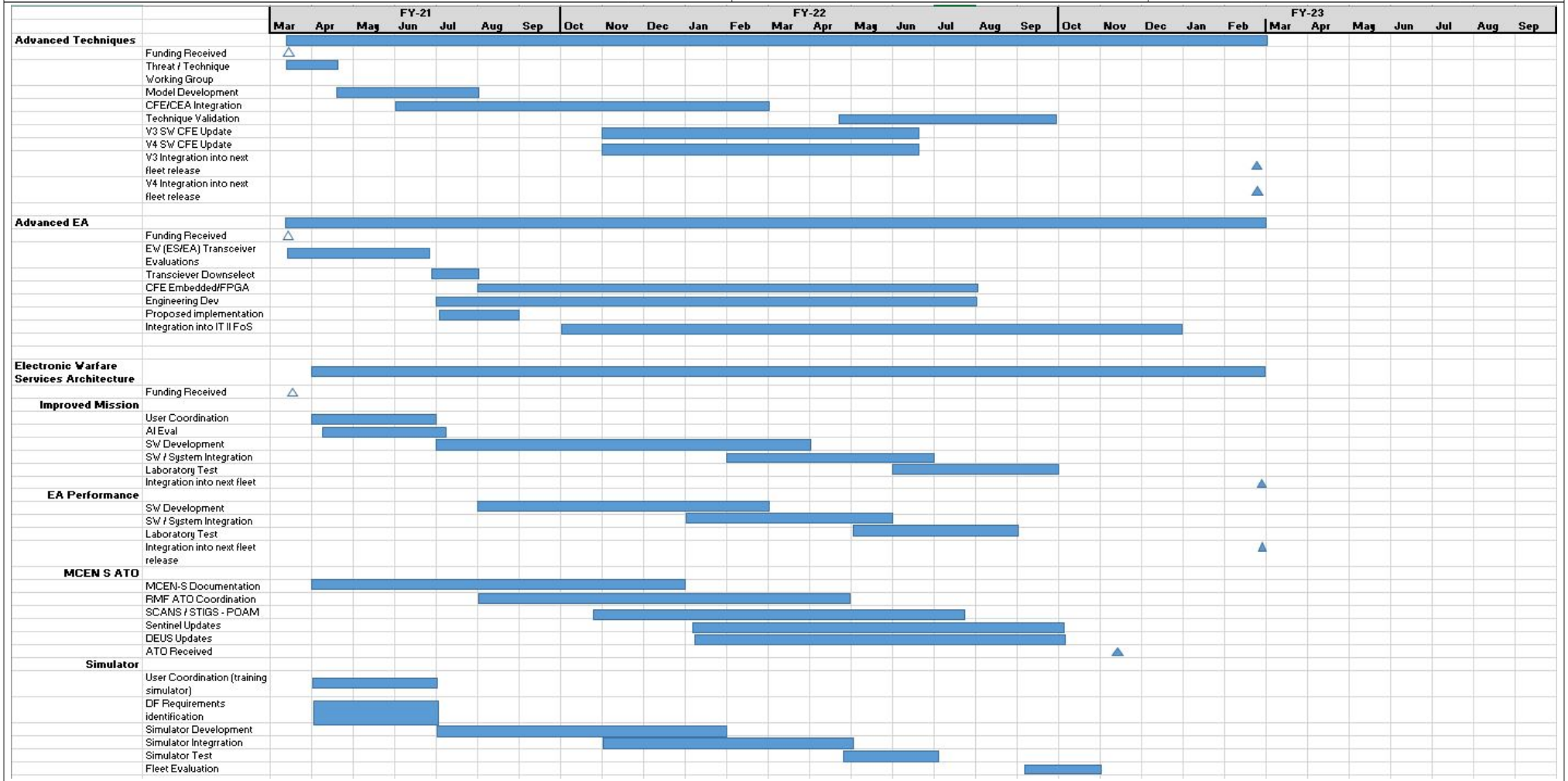
**Product Development ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Primary Hardware Development EWSA | WR | NAWCWD : Point Mugu, CA | 0.000 | 5.373 | Mar 2021 | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 5.373 | - |
| Primary Hardware Development AEA | WR | NAWCWD : Point Mugu, CA | 0.000 | 2.873 | Mar 2021 | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 2.873 | - |
| Primary Hardware Development Jammer Techniques | WR | NAWCWD : Point Mugu, CA | 0.000 | 2.373 | Mar 2021 | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 2.373 | - |
| | | **Subtotal** | 0.000 | 10.619 | | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 10.619 | N/A |

| | Prior Years | FY 2021 Cost | FY 2021 Award Date | FY 2022 Cost | FY 2022 Award Date | FY 2023 Base Cost | FY 2023 Base Award Date | FY 2023 OCO Cost | FY 2023 OCO Award Date | FY 2023 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Project Cost Totals** | 0.000 | 10.619 | | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 10.619 | N/A |

**Remarks**

| Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>9999 / *Congressional Adds* |



| Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>9999 / *Congressional Adds* |

## Schedule Details

| | Start | | End | |
|---|---|---|---|---|
| **Events by Sub Project** | **Quarter** | **Year** | **Quarter** | **Year** |
| ***Intrepid Tiger II Congressional Add*** | | | | |
| Advanced Jammer Techniques: Funding Recieved | 2 | 2021 | 2 | 2021 |
| Advanced Jammer Techniques: Group | 2 | 2021 | 3 | 2021 |
| Advanced Jammer Techniques: Model Development | 3 | 2021 | 4 | 2021 |
| Advanced Jammer Techniques: CFE/CEA Integration | 3 | 2021 | 2 | 2022 |
| Advanced Jammer Techniques: Technique Validation V3/V4 | 3 | 2022 | 4 | 2022 |
| Advanced Jammer Techniques: V3 SW CFE Update | 1 | 2022 | 3 | 2022 |
| Advanced Jammer Techniques: V4 SW CFE Update | 1 | 2022 | 3 | 2022 |
| Advanced Jammer Techniques: V3 Integration into next fleet release | 2 | 2023 | 2 | 2023 |
| Advanced Jammer Techniques: V4 Integration into next fleet release | 2 | 2023 | 2 | 2023 |
| Advanced EA (AEA): Funding Recieved | 2 | 2021 | 2 | 2021 |
| Advanced EA (AEA): Evaluations | 2 | 2021 | 3 | 2021 |
| Advanced EA (AEA): Transciever Downselect | 3 | 2021 | 4 | 2021 |
| Advanced EA (AEA): CFE Embedded/FPGA | 4 | 2021 | 4 | 2022 |
| Advanced EA (AEA): Engineering Dev | 3 | 2021 | 4 | 2022 |
| Advanced EA (AEA): Proposed implementation | 3 | 2021 | 4 | 2021 |
| Advanced EA (AEA): Integration into IT II FoS | 1 | 2022 | 1 | 2023 |
| Electronic Warefare Services Architecture (EWSA): Funding Recieved | 2 | 2021 | 2 | 2021 |
| Electronic Warefare Services Architecture (EWSA): Improved Mission: User Coordination | 3 | 2021 | 3 | 2021 |
| Electronic Warefare Services Architecture (EWSA): Improved Mission: AI Eval | 3 | 2021 | 4 | 2021 |
| Electronic Warefare Services Architecture (EWSA): Improved Mission: SW Development | 4 | 2021 | 2 | 2022 |

| Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>9999 / *Congressional Adds* |

| | Start | | End | |
|---|---|---|---|---|
| **Events by Sub Project** | **Quarter** | **Year** | **Quarter** | **Year** |
| Electronic Warefare Services Architecture (EWSA): Improved Mission: SW / System Integration | 2 | 2022 | 3 | 2022 |
| Electronic Warefare Services Architecture (EWSA): Improved Mission: Laboratory Test | 3 | 2022 | 4 | 2022 |
| Electronic Warefare Services Architecture (EWSA): Improved Mission: Integration into next fleet release | 2 | 2023 | 2 | 2023 |
| Electronic Warefare Services Architecture (EWSA): EA Performance Algorithm Integration: SW Development | 4 | 2021 | 2 | 2022 |
| Electronic Warefare Services Architecture (EWSA): EA Performance Algorithm Integration: SW / System Integration | 2 | 2022 | 3 | 2022 |
| Electronic Warefare Services Architecture (EWSA): EA Performance Algorithm Integration: Laboratory Test | 3 | 2022 | 4 | 2022 |
| Electronic Warefare Services Architecture (EWSA): EA Performance Algorithm Integration: Integration into next fleet release | 2 | 2023 | 2 | 2023 |
| Electronic Warefare Services Architecture (EWSA): MCEN S ATO: MCEN-S Documentation | 3 | 2021 | 1 | 2022 |
| Electronic Warefare Services Architecture (EWSA): MCEN S ATO: RMF ATO Coordination | 4 | 2021 | 3 | 2022 |
| Electronic Warefare Services Architecture (EWSA): MCEN S ATO: SCANS / STIGS - POAM | 1 | 2022 | 4 | 2022 |
| Electronic Warefare Services Architecture (EWSA): MCEN S ATO: Sentinel Updates | 2 | 2022 | 1 | 2023 |
| Electronic Warefare Services Architecture (EWSA): MCEN S ATO: DEUS Updates | 2 | 2022 | 1 | 2023 |
| Electronic Warefare Services Architecture (EWSA): MCEN S ATO: ATO Received | 1 | 2023 | 1 | 2023 |
| Electronic Warefare Services Architecture (EWSA): Simulator Improvements: User Coordination (training simulator) | 3 | 2021 | 4 | 2021 |
| Electronic Warefare Services Architecture (EWSA): Simulator Improvements: DF Requirements identification | 3 | 2021 | 4 | 2021 |
| Electronic Warefare Services Architecture (EWSA): Simulator Improvements: Simulator Development | 4 | 2021 | 2 | 2022 |

| Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy | | Date: April 2022 |
|---|---|---|
| **Appropriation/Budget Activity**<br>1319 / 5 | **R-1 Program Element (Number/Name)**<br>PE 0604270N / *Electronic Warfare (EW) Dev* | **Project (Number/Name)**<br>9999 / *Congressional Adds* |

| | Start | | End | |
|---|---|---|---|---|
| **Events by Sub Project** | **Quarter** | **Year** | **Quarter** | **Year** |
| Electronic Warefare Services Architecture (EWSA): Simulator Improvements: Simulator Integration | 1 | 2022 | 3 | 2022 |
| Electronic Warefare Services Architecture (EWSA): Simulator Improvements: Simulator Test | 3 | 2022 | 4 | 2022 |
| Electronic Warefare Services Architecture (EWSA): Simulator Improvements: Fleet Evaluation | 4 | 2022 | 1 | 2023 |