

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Navy **Date:** March 2024

| | |
|--|---|
| Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy I BA 7: Operational Systems Development | R-1 Program Element (Number/Name) PE 0204460M I Ground/Air Task Oriented Radar (G/ATOR) |
|--|---|

| COST (\$ in Millions) | Prior Years | FY 2023 | FY 2024 | FY 2025 Base | FY 2025 OCO | FY 2025 Total | FY 2026 | FY 2027 | FY 2028 | FY 2029 | Cost To Complete | Total Cost |
|-------------------------------|-------------|---------|---------|--------------|-------------|---------------|---------|---------|---------|---------|------------------|------------|
| Total Program Element | 543.380 | 49.051 | 92.674 | 51.346 | - | 51.346 | 38.226 | 23.453 | 21.346 | 19.690 | Continuing | Continuing |
| 9C89: Marine Ground-Air Radar | 543.380 | 49.051 | 92.674 | 51.346 | - | 51.346 | 38.226 | 23.453 | 21.346 | 19.690 | Continuing | Continuing |

Program MDAP/MAIS Code:
Project MDAP/MAIS Code(s): 386

A. Mission Description and Budget Item Justification

The Ground/Air Task Oriented Radar (G/ATOR) is a multi-role, ground-based, expeditionary 3D radar system employed by both the Air Combat Element and Ground Combat Element within the Marine Air Ground Task Force. It satisfies the Marine Air Command and Control System and the Ground Counter Fire/Counter Battery capabilities. G/ATOR provides mobile, multi-functional, three-dimensional surveillance of air breathing targets, detection of cruise missiles, unmanned aerial systems, rockets, artillery and mortars, and the cueing of air defense weapons. G/ATOR contributes to Littoral Operations in a Contested Environment and Expeditionary Advanced Base Operations by surveillance and detection of enemy air threats not seen by Navy sensors in the littorals and participating in a cooperative engagement network of sensors and shooters. G/ATOR enables integrated fire control (IFC) and provides engage/fire on remote capability. G/ATOR surveillance coverage with IFC will provide unprecedented reach, volume, and precision in the execution of Operational Maneuver From The Sea allowing Naval forces to project and sustain power deep inland. G/ATOR is the primary ground-based sensor for the United States Marine Corps, and is the only air defense/air surveillance radar currently in the Marine Corps inventory.

B. Program Change Summary (\$ in Millions)

| | <u>FY 2023</u> | <u>FY 2024</u> | <u>FY 2025 Base</u> | <u>FY 2025 OCO</u> | <u>FY 2025 Total</u> |
|-------------------------------------|----------------|----------------|---------------------|--------------------|----------------------|
| Previous President's Budget | 61.104 | 92.674 | 54.414 | - | 54.414 |
| Current President's Budget | 49.051 | 92.674 | 51.346 | - | 51.346 |
| Total Adjustments | -12.053 | 0.000 | -3.068 | - | -3.068 |
| • Congressional General Reductions | - | - | | | |
| • Congressional Directed Reductions | - | - | | | |
| • Congressional Rescissions | - | - | | | |
| • Congressional Adds | - | - | | | |
| • Congressional Directed Transfers | - | - | | | |
| • Reprogrammings | -10.168 | 0.000 | | | |
| • SBIR/STTR Transfer | -1.885 | 0.000 | | | |
| • Program Adjustments | 0.000 | 0.000 | -3.070 | - | -3.070 |
| • Rate/Misc Adjustments | 0.000 | 0.000 | 0.002 | - | 0.002 |

Change Summary Explanation

FY 2025 funding decrease of \$3.068M is primarily due to completion of development of the Radar Signal Processor (RSP). Budget reflects funding required to continue to support the development and integration of software required to implement the full spectrum of Naval Integrated Fire Control (NIFC), the continuation

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Navy **Date:** March 2024

| | |
|---|--|
| Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 7: Operational Systems Development</i> | R-1 Program Element (Number/Name) PE 0204460M / <i>Ground/Air Task Oriented Radar (G/ATOR)</i> |
|---|--|

of the Ground Weapons Locating Radar user improvements identified during DT/OT and IOT&E testing, Multi-Domain Radar in a Contested Environment (MuDRaCE), a new Digital Receiver/Exciter (DREX), Mode S, and G/ATOR Block IV (GB4) Expeditionary Airfield Surveillance Radar (EASR) development, while continuing to pursue software capability improvements providing both Low, Slow, Small (LSS) target detection and Non-Cooperative Target Recognition (NCTR).

UNCLASSIFIED

| | | | | | | | | | | | | |
|--|--------------------|----------------|----------------|---------------------|--|----------------------|----------------|----------------|---|-------------------------|-------------------------|-------------------|
| Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy | | | | | | | | | | Date: March 2024 | | |
| Appropriation/Budget Activity 1319 / 7 | | | | | R-1 Program Element (Number/Name) PE 0204460M / <i>Ground/Air Task Oriented Radar (G/ATOR)</i> | | | | Project (Number/Name) 9C89 / <i>Marine Ground-Air Radar</i> | | | |
| COST (\$ in Millions) | Prior Years | FY 2023 | FY 2024 | FY 2025 Base | FY 2025 OCO | FY 2025 Total | FY 2026 | FY 2027 | FY 2028 | FY 2029 | Cost To Complete | Total Cost |
| 9C89: <i>Marine Ground-Air Radar</i> | 543.380 | 49.051 | 92.674 | 51.346 | - | 51.346 | 38.226 | 23.453 | 21.346 | 19.690 | Continuing | Continuing |
| Quantity of RDT&E Articles | | - | - | - | - | - | - | - | - | - | | |
| Project MDAP/MAIS Code: 386 | | | | | | | | | | | | |

A. Mission Description and Budget Item Justification

The Ground/Air Task Oriented Radar (G/ATOR) is a critical CMC Force Design program. G/ATOR is a multi-role, ground-based, expeditionary 3D radar system employed by both the Air Combat Element (ACE) and Ground Combat Element (GCE) within the Marine Air Ground Task Force. It satisfies the Marine Air Command and Control System and the Ground Counter Fire/Counter Battery capabilities. G/ATOR provides mobile, multi-functional, three-dimensional surveillance of air breathing targets, detection of cruise missiles, Unmanned Aerial Systems (UAS), Rockets, Artillery and Mortars, and the cueing of air defense weapons. G/ATOR contributes to Littoral Operations in a Contested Environment (LOCE) and Expeditionary Advanced Base Operations (EABO) by surveillance and detection of enemy air threats not seen by Navy sensors in the littorals and participating in a cooperative engagement network of sensors and shooters. G/ATOR enables integrated fire control (IFC) and provides engage/fire on remote capability. G/ATOR surveillance coverage with IFC will provide unprecedented reach, volume, and precision in the execution of Operational Maneuver from The Sea allowing Naval forces to project and sustain power deep inland. G/ATOR is the primary Ground-Based sensor for the United States Marine Corps and is the only Air Defense/Air Surveillance radar currently in the Marine Corps inventory.

RDT&E funding decreases \$41.328M from FY 2024 to FY 2025. Budget reflects funding required to continue to support the development and integration of software required to implement the full spectrum of Naval Integrated Fire Control (NIFC), the continuation of the Ground Weapons Locating Radar user improvements, identified during DT/OT and IOT&E testing, Multi-Domain Radar in a Contested Environment (MuDRaCE), a new Digital Receiver/Exciter (DREX), Mode S, and G/ATOR Block IV (GB4) Expeditionary Airfield Surveillance Radar (EASR) development, while continuing to pursue software capability improvements providing both Low, Slow, Small (LSS) target detection and Non-Cooperative Target Recognition (NCTR).

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

| | FY 2023 | FY 2024 | FY 2025 Base | FY 2025 OCO | FY 2025 Total |
|---|----------------|----------------|---------------------|--------------------|----------------------|
| Title: G/ATOR Contractor Technical, Development Engineering/Block 1 (GB1) | 29.012 | 61.255 | 18.007 | 0.000 | 18.007 |
| Articles: | - | - | - | - | - |
| FY 2024 Plans: | | | | | |
| - Completes Electronic Protection, Cyber Protection & Systems Security efforts. | | | | | |
| - Initiates the development of a new Digital Exciter/Receiver (DREX). | | | | | |
| - Initiates Mode S development. | | | | | |
| - Initiates and completes the development of a Radar Tracker Software Enhancement (RTSE). | | | | | |
| - Continues NCTR and LSS Target Detection software development. | | | | | |

UNCLASSIFIED

| | | |
|--|--|---|
| Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy | | Date: March 2024 |
| Appropriation/Budget Activity 1319 / 7 | R-1 Program Element (Number/Name) PE 0204460M / <i>Ground/Air Task Oriented Radar (G/ATOR)</i> | Project (Number/Name) 9C89 / <i>Marine Ground-Air Radar</i> |

| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each) | FY 2023 | FY 2024 | FY 2025 Base | FY 2025 OCO | FY 2025 Total |
|--|----------------|----------------|-------------------------|------------------------|--------------------------|
| <p>- Continues the development and integration of software to implement NIFC.</p> <p>FY 2025 Base Plans:</p> <ul style="list-style-type: none"> - Completes LSS Target Detection software development. - Will continue and complete the development of a new Digital Exciter/Receiver (DREX). - Will continue Mode S development. - Will continue NCTR software development. - Will continue the development and integration of software to implement NIFC. <p>FY 2025 OCO Plans: N/A</p> <p>FY 2024 to FY 2025 Increase/Decrease Statement: G/ATOR Contractor Technical, Development Engineering Block 1 (GB1) funding decreases significantly (\$43.248M) from FY 2024 to FY 2025, requesting only the funding required to continue to enhance both Radar and Force Survivability in a Peer/Near-Peer Competitor environment through the development and integration of software required to implement the full spectrum of NIFC, Mode S and a new DREX, which are all necessary to implement Warfighter desired USMC Force Design 2030 capability enhancements.</p> | | | | | |
| <p>Title: G/ATOR Contractor Technical, Development Engineering/Block 2 (GB2)</p> <p align="right">Articles:</p> <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - Continues the development of specific user enhancements for GB2 software in order to improve the operator's situational awareness, tracker performance refinements and allow for a quick assessment of the radar's state of operations and performance. <p>FY 2025 Base Plans:</p> <ul style="list-style-type: none"> - Will continue the development of specific user enhancements for GB2 software in order to improve the operator's situational awareness, tracker performance refinements and allow for a quick assessment of the radar's state of operations and performance. <p>FY 2025 OCO Plans: N/A</p> <p>FY 2024 to FY 2025 Increase/Decrease Statement:</p> | 2.897 | 3.129 | 3.285 | 0.000 | 3.285 |
| | - | - | - | - | - |

UNCLASSIFIED

| | | | | | |
|---|--|---|-------------------------|--------------------|----------------------|
| Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy | | | Date: March 2024 | | |
| Appropriation/Budget Activity 1319 / 7 | R-1 Program Element (Number/Name) PE 0204460M / <i>Ground/Air Task Oriented Radar (G/ATOR)</i> | Project (Number/Name) 9C89 / <i>Marine Ground-Air Radar</i> | | | |
| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each) | | | | | |
| | FY 2023 | FY 2024 | FY 2025 Base | FY 2025 OCO | FY 2025 Total |
| G/ATOR Contractor Technical, Development Engineering Block 2 funding increases by \$0.156M from FY 2024 to FY 2025 in order to continue enhancements to GB2 software that were identified during DT, OA and IOT&E. | | | | | |
| Title: G/ATOR Contractor Technical, Development Engineering/Block 4 (GB4) | | | | | |
| Articles: | | | | | |
| | 0.000 | 12.009 | 12.140 | 0.000 | 12.140 |
| | - | - | - | - | - |
| Description: A 2007 Marine Corps senior leadership decision directed the AN/TPS-80 would replace the Air Traffic Navigation Integration and Coordination System (ATNAVICS) as the Marine Corps Expeditionary Airfield Surveillance RADAR (EASR) for Air Traffic Control (ATC). | | | | | |
| FY 2024 Plans: Initiated G/ATOR Expeditionary Airfield Surveillance Radar (EASR) development. RDT&E funds will begin development of the software baseline, update CAC2S/CTN interface, and address the ATC FAA certification for use within the National Airspace System (NAS). | | | | | |
| FY 2025 Base Plans: Completes G/ATOR EASR software development. RDT&E funds will develop a software baseline, update the CAC2S/CTN interface, and address ATC FAA certification for use within the National Airspace System (NAS). | | | | | |
| FY 2025 OCO Plans: N/A | | | | | |
| FY 2024 to FY 2025 Increase/Decrease Statement: Funding increases by \$0.131M from FY 2023 to FY 2024 in order to complete development of the software baseline, update CAC2S/CTN interface, and address ATC FAA certification for use within the NAS. | | | | | |
| Title: Multi-Domain Radar in a Contested Environment (MuDRaCE) | | | | | |
| Articles: | | | | | |
| | 4.962 | 3.005 | 3.999 | 0.000 | 3.999 |
| | - | - | - | - | - |
| FY 2024 Plans: - Continues the development of adaptive layers for C2 integration and for Near Range and Far Range passive detection and air surveillance in spectrum dense environments. | | | | | |
| FY 2025 Base Plans: - Will continue the development of adaptive layers for C2 integration and for Near Range and Far Range passive detection and air surveillance in spectrum dense environments. | | | | | |
| FY 2025 OCO Plans: | | | | | |

UNCLASSIFIED

| | | |
|--|--|---|
| Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy | | Date: March 2024 |
| Appropriation/Budget Activity 1319 / 7 | R-1 Program Element (Number/Name) PE 0204460M / <i>Ground/Air Task Oriented Radar (G/ATOR)</i> | Project (Number/Name) 9C89 / <i>Marine Ground-Air Radar</i> |

| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each) | FY 2023 | FY 2024 | FY 2025 Base | FY 2025 OCO | FY 2025 Total |
|---|----------------|----------------|---------------------|--------------------|----------------------|
| N/A | | | | | |
| <p><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i> MuDRaCE is a Future Naval Capability (FNC) that transitioned from the Office of Naval Research (ONR) in FY 2023. MuDRaCE increases by \$0.994M from FY 2024 to FY 2025 in order to continue to enhance Radar and Force Survivability in a Peer/Near-Peer Competitor environment by allowing for aviation ground command and control agencies to minimize probability of detection through signature management.</p> | | | | | |
| <p><i>Title:</i> Government Technical Support</p> <p align="right"><i>Articles:</i></p> <p><i>Description:</i> The Government Technical Support Team provides primarily inherent governmental support functions, including Federally Funded Research and Development Centers (FFRDCs), adding depth, breadth, and expertise not resident in the G/ATOR Program Office. Functions include technical planning as well as execution and analysis across multi-disciplinary competencies to include; Systems Architecture, Radar Software Engineering, Radar Systems Engineering, Tactical Target Generator (Radar Decoy) Engineering, Cyber Security/Information Assurance, Human Systems Integration, Safety, Program Protection and Configuration Management. It also includes the coordination necessary to enable a System of Systems interface with other programs in the "Cue to Slew" kill chain such as Air Command and Control and Sensor Netting (AC2SN), Composite Tracking Network (CTN) & Advanced Field Artillery Tactical Data System (AFATDS), Naval Integration Fire Control (NIFC) as well as, providing passive detection and air surveillance in spectrum dense environments via Multi-Domain Radar in a Contested Environment (MuDRaCE), ultimately ensuring platform/software compatibility. Technical Team support is vital during the both the G/ATOR System's Production phase and for the USMC Force Design capability enhancements, as it is the Government's responsibility to ensure that G/ATOR meets Government Performance Specification Verification.</p> <p><i>FY 2024 Plans:</i> - Continues Government support from the following activities to enable program execution: MITRE; NIWC Atlantic, NSWC Dahlgren; NSWC Crane; NAWC-AD China Lake; AIMS and DTIC.</p> <p><i>FY 2025 Base Plans:</i> - Will continue Government support from the following activities to enable program execution: MITRE; NIWC Atlantic, NSWC Dahlgren; NSWC Crane; NAWC-AD China Lake; AIMS and DTIC.</p> <p><i>FY 2025 OCO Plans:</i></p> | 8.112 | 9.005 | 9.442 | 0.000 | 9.442 |
| | - | - | - | - | - |

UNCLASSIFIED

| | | |
|--|--|---|
| Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy | | Date: March 2024 |
| Appropriation/Budget Activity 1319 / 7 | R-1 Program Element (Number/Name) PE 0204460M / <i>Ground/Air Task Oriented Radar (G/ATOR)</i> | Project (Number/Name) 9C89 / <i>Marine Ground-Air Radar</i> |

| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each) | FY 2023 | FY 2024 | FY 2025 Base | FY 2025 OCO | FY 2025 Total |
|---|----------------|----------------|---------------------|--------------------|----------------------|
| N/A | | | | | |
| <p><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i> Government Technical Support funding increases by \$0.437M from FY 2024 to FY 2025 as G/ATOR continues to enhance Radar and Force Survivability in a Peer/Near-Peer Competitor environment with the continuation of GB1 development consisting of Mode S, DREX, NIFC, LSS Targets, NCTR, as well as the continued development of GB2 User Improvements, GB4 EASR and MuDRaCE.</p> | | | | | |
| <p><i>Title:</i> G/ATOR: Test and Evaluation</p> | 2.090 | 2.187 | 2.303 | 0.000 | 2.303 |
| <i>Articles:</i> | - | - | - | - | - |
| <p><i>FY 2024 Plans:</i> - Continues to conduct improved software capability and survivability related engineering testing focusing on Electronic Protection, Cyber Protection and Systems Security.</p> | | | | | |
| <p><i>FY 2025 Base Plans:</i> - Will continue to conduct improved software capability and survivability related engineering testing focusing on Electronic Protection, Cyber Protection and Systems Security. - Initiates testing of adaptive layers for C2 integration and for Near Range and Far Range passive detection and air surveillance in spectrum dense environments.</p> | | | | | |
| <p><i>FY 2025 OCO Plans:</i> N/A</p> | | | | | |
| <p><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i> G/ATOR Test and Evaluation funding increases by \$0.115M from FY 2024 to FY 2025 as G/ATOR continues to enhance both Radar and Force Survivability capabilities needed in a Peer/Near-Peer Competitor environment.</p> | | | | | |
| <p><i>Title:</i> G/ATOR: Management Services & Travel</p> | 1.978 | 2.084 | 2.170 | 0.000 | 2.170 |
| <i>Articles:</i> | - | - | - | - | - |
| <p><i>FY 2024 Plans:</i> - Continues to provide program office travel in support of system development and management services related to engineering test events. - Continues RDT&E related engineering, management, program office support and travel for GB2 User Enhancements, LSS Targets, NCTR, NIFC and MuDRaCE.</p> | | | | | |

UNCLASSIFIED

| | | |
|--|--|---|
| Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy | | Date: March 2024 |
| Appropriation/Budget Activity 1319 / 7 | R-1 Program Element (Number/Name) PE 0204460M / <i>Ground/Air Task Oriented Radar (G/ATOR)</i> | Project (Number/Name) 9C89 / <i>Marine Ground-Air Radar</i> |

| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each) | FY 2023 | FY 2024 | FY 2025 Base | FY 2025 OCO | FY 2025 Total |
|--|----------------|----------------|-------------------------|------------------------|--------------------------|
| - Initiates RDT&E related engineering, management, program office support and travel for Mode S, DREX and GB4 EASR. - Initiates and completes RDT&E related engineering, management, program office support and travel for RTSE. FY 2025 Base Plans: - Will continue to provide program office travel in support of system development and management services related to engineering test events. - Will continue RDT&E related engineering, management, program office support and travel for GB2 User Enhancements, NCTR, NIFC, Mode S and MuDRaCE. - Will complete RDT&E related engineering, management, program office support and travel for DREX, LSS Targets and GB4 EASR. FY 2025 OCO Plans: N/A FY 2024 to FY 2025 Increase/Decrease Statement: Program Office travel funding and management services increases by \$0.087M from FY 2024 to FY 2025 in order to continue to support the development of both Radar and Force Survivability capabilities needed in a Peer/Near-Peer Competitor environment. | | | | | |
| Accomplishments/Planned Programs Subtotals | 49.051 | 92.674 | 51.346 | 0.000 | 51.346 |

| C. Other Program Funding Summary (\$ in Millions) | | | | | | | | | | | |
|--|----------------|----------------|-------------------------|------------------------|--------------------------|----------------|----------------|----------------|----------------|-----------------------------|-------------------|
| Line Item | FY 2023 | FY 2024 | FY 2025 Base | FY 2025 OCO | FY 2025 Total | FY 2026 | FY 2027 | FY 2028 | FY 2029 | Cost To Complete | Total Cost |
| • RDTE/0604504N/0718: <i>AIR CONTROL MATCAL</i> | 3.008 | 1.063 | 0.878 | - | 0.878 | 0.938 | 0.998 | 1.059 | 1.082 | Continuing | Continuing |
| • PMC/7000/J4655: <i>INITIAL SPARES-G/ATOR</i> | 7.422 | 14.802 | 7.603 | - | 7.603 | 19.943 | 18.739 | 16.031 | 16.365 | Continuing | Continuing |
| • PMC/4655: <i>GROUND/AIR TASK ORIENTED RADAR</i> | 369.763 | 66.291 | 71.941 | - | 71.941 | 55.920 | 57.199 | 52.019 | 29.223 | Continuing | Continuing |

Remarks

UNCLASSIFIED

| | | |
|---|---|--|
| Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy | | Date: March 2024 |
| Appropriation/Budget Activity 1319 / 7 | R-1 Program Element (Number/Name) PE 0204460M / <i>Ground/Air Task Oriented Radar (G/ATOR)</i> | Project (Number/Name) 9C89 / <i>Marine Ground-Air Radar</i> |

D. Acquisition Strategy

The Ground/Air Task Oriented Radar (G/ATOR) is a multi-role, ground-based, expeditionary radar that replaces five legacy radar systems and provides the USMC Air Defense and Air Surveillance (AD/AS) (G/ATOR Block 1), Counterfire/Targeting (G/ATOR Block 2), and Expeditionary Airfield Surveillance (G/ATOR Block 4) capability. The AD/AS (GB1) development effort was competitively awarded in 2007 and completed Milestone C in FY 2014. GB1 achieved Initial Operational Capability (IOC) in March 2018. Development of the Counterfire/Targeting (GB2) capability was initiated in FY 2010 with a RFI to industry, followed by a Business Case Analysis (BCA) to select the most cost-effective procurement strategy. The results of the BCA indicated that a sole source contract to Northrup Grumman Mission Systems (NGMS) was the most cost-effective solution. Thus, the GB2 development contract awarded in August FY 2015. GB2 achieved IOC in February 2019. The strategy for GB4 is to begin development in FY 2024 through FY 2025 with testing beginning in FY 2026 through midway FY 2027. The Full Rate Production (FRP) Contract with NGMS awarded in June 2019. FRP Lot 5 (Congressional Add) contract awarded Sept 2023. G/ATOR enhancements include a three-phased Electronic Protection, Cyber Protection and Systems Security effort, Radar Emplacement/Displacement improvements, G/ATOR Tactical Target Generators (Decoys), Low-Slow-Small (LSS) Target Detection, Non-Cooperative Target Recognition (NCTR), Naval Integrated Fire Control (NIFC), GB2 User Enhancements, Communications Modernization, Long Range Radar (LRR) Kits, replacement of a 2007 vintage Radar Signal Processor (RSP), the implementation of Multi-Domain Radar in a Contested environment (MuDRaCE), and the initiation of a Radar Tracker Software Enhancement (RTSE), Mode S, Digital Receiver/Exciter (DREX) and GB4 development, which are all necessary to increase both G/ATOR's and the Fleet Marine Force's survivability in a Peer/Near-Peer competitor environment. In order to improve G/ATOR's reliability and sustainability, the implementation of a Pallet Communications Support Processor (PCSP) Engineering Change Order (ECO) has been cut-in to FRP Lots 3 and 4, along with the retrofit of the remaining 29 Radar Systems. With the exception of MuDRaCE, these capability enhancements/ improvements will be awarded as task orders on the Northrup Grumman Mission Systems Sustainment Engineering and Logistics Support (SELS) contract, awarded 1Q FY 2021, that will support the continued development of G/ATOR capability enhancements and the deployment, sustainment and maintenance of delivered G/ATOR systems. A follow-on SELS II Contract is planned for 1Q FY 2026 through 4Q FY 2030. Post FY 2023, RSP Refresh continued development and procurement will be funded using America's Mid-Band Initiative Team (ABMIT) 5G funding.

UNCLASSIFIED

| | | | | | | | | | | | | | | | |
|---|--|--|--|--|--|--|--|--|--|--|---|--|--|--|--|
| Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy | | | | | | | | | | | Date: March 2024 | | | | |
| Appropriation/Budget Activity 1319 / 7 | | | | | | R-1 Program Element (Number/Name) PE 0204460M / <i>Ground/Air Task Oriented Radar (G/ATOR)</i> | | | | | Project (Number/Name) 9C89 / <i>Marine Ground-Air Radar</i> | | | | |

| Product Development (\$ in Millions) | | | | FY 2023 | | FY 2024 | | FY 2025 Base | | FY 2025 OCO | | FY 2025 Total | | | |
|---|-----------------------------------|--|--------------------|----------------|-------------------|----------------|-------------------|---------------------|-------------------|--------------------|-------------------|----------------------|-------------------------|-------------------|---------------------------------|
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Cost To Complete | Total Cost | Target Value of Contract |
| G/ATOR Block 1 (GB1) | C/CPIF | NORTHROP GRUMMAN SYSTEMS CORPORATION : LINTHICUM HEIGHTS, MD | 265.762 | 29.012 | Dec 2022 | 61.255 | Dec 2023 | 18.007 | Dec 2024 | - | | 18.007 | Continuing | Continuing | Continuing |
| G/ATOR Block 2 (GB2) | C/CPIF | NORTHROP GRUMMAN SYSTEMS CORPORATION : LINTHICUM HEIGHTS, MD | 67.895 | 2.897 | Jan 2023 | 3.129 | Jan 2024 | 3.285 | Jan 2025 | - | | 3.285 | Continuing | Continuing | Continuing |
| G/ATOR Block 4 (GB4) EASR | C/CPIF | NORTHROP GRUMMAN SYSTEMS CORPORATION : LINTHICUM HEIGHTS, MD | 0.000 | 0.000 | | 12.009 | Jan 2024 | 12.140 | Jan 2025 | - | | 12.140 | Continuing | Continuing | Continuing |
| MuDRaCE | C/CPFF | DYNETICS : HUNTSVILLE, AL | 0.000 | 4.962 | Feb 2023 | 3.005 | Feb 2024 | 3.999 | Feb 2025 | - | | 3.999 | Continuing | Continuing | Continuing |
| Subtotal | | | 333.657 | 36.871 | | 79.398 | | 37.431 | | - | | 37.431 | Continuing | Continuing | N/A |

Remarks
 G/ATOR Product Development funding decreases from FY 2024 to FY 2025, requesting only the funding required to continue to develop Warfighter desired USMC Force Design Capability enhancements, that include NIFC, GB2 User Improvements, LSS Targets, NCTR, Mode S, DREX, EASR and MuDRaCE, which are all necessary for Radar and Force Survivability in a Peer/Near-Peer Competitor environment. GB4 equates to G/ATOR Expeditionary Airfield Surveillance Radar (EASR) development.

| Support (\$ in Millions) | | | | FY 2023 | | FY 2024 | | FY 2025 Base | | FY 2025 OCO | | FY 2025 Total | | | |
|---------------------------------|-----------------------------------|---|--------------------|----------------|-------------------|----------------|-------------------|---------------------|-------------------|--------------------|-------------------|----------------------|-------------------------|-------------------|---------------------------------|
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Cost To Complete | Total Cost | Target Value of Contract |
| FFRDC TECHNICAL SUPPORT | FFRDC | MITRE : BOSTON, MA | 10.260 | 1.154 | Dec 2022 | 1.212 | Dec 2023 | 1.272 | Dec 2024 | - | | 1.272 | Continuing | Continuing | Continuing |

UNCLASSIFIED

| | | | | | | | | | | | | | | | |
|---|--|--|--|--|--|---|--|--|--|--|--|--|--|--|--|
| Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy | | | | | | | | | | | Date: March 2024 | | | | |
| Appropriation/Budget Activity 1319 / 7 | | | | | | R-1 Program Element (Number/Name) PE 0204460M / Ground/Air Task Oriented Radar (G/ATOR) | | | | | Project (Number/Name) 9C89 / Marine Ground-Air Radar | | | | |

| Support (\$ in Millions) | | | | FY 2023 | | FY 2024 | | FY 2025 Base | | FY 2025 OCO | | FY 2025 Total | | | |
|---------------------------------|-----------------------------------|---|--------------------|----------------|-------------------|----------------|-------------------|---------------------|-------------------|--------------------|-------------------|----------------------|-------------------------|-------------------|---------------------------------|
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Cost To Complete | Total Cost | Target Value of Contract |
| NSWC TECHNICAL SUPPORT | WR | NSWC DAHLGREN : DAHLGREN, VA | 51.429 | 3.252 | Dec 2022 | 4.065 | Dec 2023 | 4.268 | Dec 2024 | - | | 4.268 | Continuing | Continuing | Continuing |
| NSWC TECHNICAL SUPPORT | WR | NSWC CRANE : CRANE, IN | 6.860 | 1.274 | Dec 2022 | 1.593 | Dec 2023 | 1.673 | Dec 2024 | - | | 1.673 | Continuing | Continuing | Continuing |
| NAVAIR TECHNICAL SUPPORT | WR | NAVAIR AD : CHINA LAKE, CA | 0.155 | 0.020 | Dec 2022 | 0.025 | Dec 2023 | 0.025 | Dec 2024 | - | | 0.025 | Continuing | Continuing | Continuing |
| NAVAIR TECHNICAL SUPPORT | WR | NAVAIR : PAX RIVER, MD | 6.844 | 0.639 | Dec 2022 | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 7.483 | - |
| AIMS TECHNICAL SUPPORT | WR | AIMS : ROBINS AFB, GA | 1.523 | 0.244 | Dec 2022 | 0.250 | Dec 2023 | 0.256 | Dec 2024 | - | | 0.256 | Continuing | Continuing | Continuing |
| DTIC TECHNICAL SUPPORT | WR | DTIC : FT BELVOIR, VA | 1.924 | 0.262 | Dec 2022 | 0.276 | Dec 2023 | 0.285 | Dec 2024 | - | | 0.285 | Continuing | Continuing | Continuing |
| NIWC TECHNICAL SUPPORT | WR | NIWC LANT : NORTH CHARLESTON, SC | 0.000 | 1.267 | Dec 2022 | 1.584 | Dec 2023 | 1.663 | Dec 2024 | - | | 1.663 | Continuing | Continuing | Continuing |
| Prior Years Cumulative Funding | Various | N/A : N/A | 22.670 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 22.670 | - |
| Subtotal | | | 101.665 | 8.112 | | 9.005 | | 9.442 | | - | | 9.442 | Continuing | Continuing | N/A |

Remarks
Award dates reflected are the actual obligation date for the first incremental award. Government Technical Support funding increases from FY 2024 to FY 2025 as G/ATOR continues to enhance Radar and Force Survivability in a Peer/Near-Peer Competitor environment with the continued development of GB2 User Improvements, LSS Targets, NCTR, NIFC, Mode S, DREX, GB4 EASR and MuDRaCE.

| Test and Evaluation (\$ in Millions) | | | | FY 2023 | | FY 2024 | | FY 2025 Base | | FY 2025 OCO | | FY 2025 Total | | | |
|---|-----------------------------------|---|--------------------|----------------|-------------------|----------------|-------------------|---------------------|-------------------|--------------------|-------------------|----------------------|-------------------------|-------------------|---------------------------------|
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Cost To Complete | Total Cost | Target Value of Contract |
| Developmental Test & Evaluation (DT&E) | C/CPIF | NORTHROP GRUMMAN SYSTEMS CORPORATION : | 19.553 | 0.626 | Dec 2022 | 0.657 | Dec 2023 | 0.689 | Dec 2024 | - | | 0.689 | Continuing | Continuing | Continuing |

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy **Date:** March 2024

| | | |
|--|--|---|
| Appropriation/Budget Activity 1319 / 7 | R-1 Program Element (Number/Name) PE 0204460M / <i>Ground/Air Task Oriented Radar (G/ATOR)</i> | Project (Number/Name) 9C89 / <i>Marine Ground-Air Radar</i> |
|--|--|---|

| Test and Evaluation (\$ in Millions) | | | | FY 2023 | | FY 2024 | | FY 2025 Base | | FY 2025 OCO | | FY 2025 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|------------------------|--------------------------------|-------------|---------|------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | | | |
| | | LINTHICUM HEIGHTS, MD | | | | | | | | | | | | | |
| Developmental Test & Evaluation (DT&E) | WR | NSWC DAHLGREN : DAHLGREN, VA | 12.413 | 0.253 | Dec 2022 | 0.266 | Dec 2023 | 0.278 | Dec 2024 | - | | 0.278 | Continuing | Continuing | Continuing |
| Developmental Test & Evaluation (DT&E) | Various | NSWC-FALLBROOK : CPEN, CA | 10.587 | 0.207 | Dec 2022 | 0.217 | Dec 2023 | 0.228 | Dec 2024 | - | | 0.228 | Continuing | Continuing | Continuing |
| Developmental Test & Evaluation (DT&E) | Various | NSWC CRANE : CRANE, IN | 2.440 | 0.228 | Dec 2022 | 0.239 | Dec 2023 | 0.251 | Dec 2024 | - | | 0.251 | Continuing | Continuing | Continuing |
| Developmental Test & Evaluation (DT&E) | Various | NSWC CORONA : CORONA, CA | 8.467 | 0.122 | Dec 2022 | 0.128 | Dec 2023 | 0.134 | Dec 2024 | - | | 0.134 | Continuing | Continuing | Continuing |
| Developmental Test & Evaluation (DT&E) | Various | NSWC PHD : DAM NECK, VA | 7.226 | 0.157 | Dec 2022 | 0.165 | Dec 2023 | 0.173 | Dec 2024 | - | | 0.173 | Continuing | Continuing | Continuing |
| Developmental Test & Evaluation (DT&E) | Various | MARFOR : Various | 1.987 | 0.102 | Dec 2022 | 0.100 | Dec 2023 | 0.105 | Dec 2024 | - | | 0.105 | Continuing | Continuing | Continuing |
| Developmental Test & Evaluation (DT&E) | WR | SCSC : WALLOPS IS, MD | 0.830 | 0.197 | Jan 2023 | 0.207 | Jan 2024 | 0.227 | Jan 2025 | - | | 0.227 | Continuing | Continuing | Continuing |
| Developmental Test & Evaluation (DT&E) | MIPR | WSMR : OTERO, NM | 0.250 | 0.198 | Jan 2023 | 0.208 | Jan 2024 | 0.218 | Jan 2025 | - | | 0.218 | Continuing | Continuing | Continuing |
| Developmental Test & Evaluation (DT&E) | Various | N/A : N/A | 31.129 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 31.129 | - |
| Subtotal | | | 94.882 | 2.090 | | 2.187 | | 2.303 | | - | | 2.303 | Continuing | Continuing | N/A |

Remarks
Award dates reflected are the actual obligation date for the first incremental award. G/ATOR Test and Evaluation funding increases from FY 2024 to FY 2025 as G/ATOR continues to enhance both Radar and Force Survivability capabilities needed in a Peer/Near-Peer Competitor environment.

| Management Services (\$ in Millions) | | | | FY 2023 | | FY 2024 | | FY 2025 Base | | FY 2025 OCO | | FY 2025 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|------------------------|--------------------------------|-------------|---------|------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | | | |
| TRAVEL | Various | MCSC : QUANTICO, VA | 2.565 | 0.350 | Sep 2023 | 0.375 | Sep 2024 | 0.380 | Sep 2025 | - | | 0.380 | Continuing | Continuing | Continuing |

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy **Date:** March 2024

| | | |
|--|--|---|
| Appropriation/Budget Activity 1319 / 7 | R-1 Program Element (Number/Name) PE 0204460M / <i>Ground/Air Task Oriented Radar (G/ATOR)</i> | Project (Number/Name) 9C89 / <i>Marine Ground-Air Radar</i> |
|--|--|---|

| Management Services (\$ in Millions) | | | | FY 2023 | | FY 2024 | | FY 2025 Base | | FY 2025 OCO | | FY 2025 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|------------------------|--------------------------------|-------------|---------|------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | | | |
| MCSC MANAGEMENT SERVICES | Various | MCSC : MCSC - QUANTICO, VA | 10.611 | 1.628 | Feb 2023 | 1.709 | Feb 2024 | 1.790 | Feb 2025 | - | | 1.790 | Continuing | Continuing | Continuing |
| Subtotal | | | 13.176 | 1.978 | | 2.084 | | 2.170 | | - | | 2.170 | Continuing | Continuing | N/A |

Remarks
Program Office travel funding and management services increases slightly from FY 2024 to FY 2025 to continue to develop Warfighter desired USMC Force Design Capability enhancements, that include NIFC, GB2 User Improvements, LSS Targets, NCTR, MuDRaCE, Mode S and GB4 EASR.

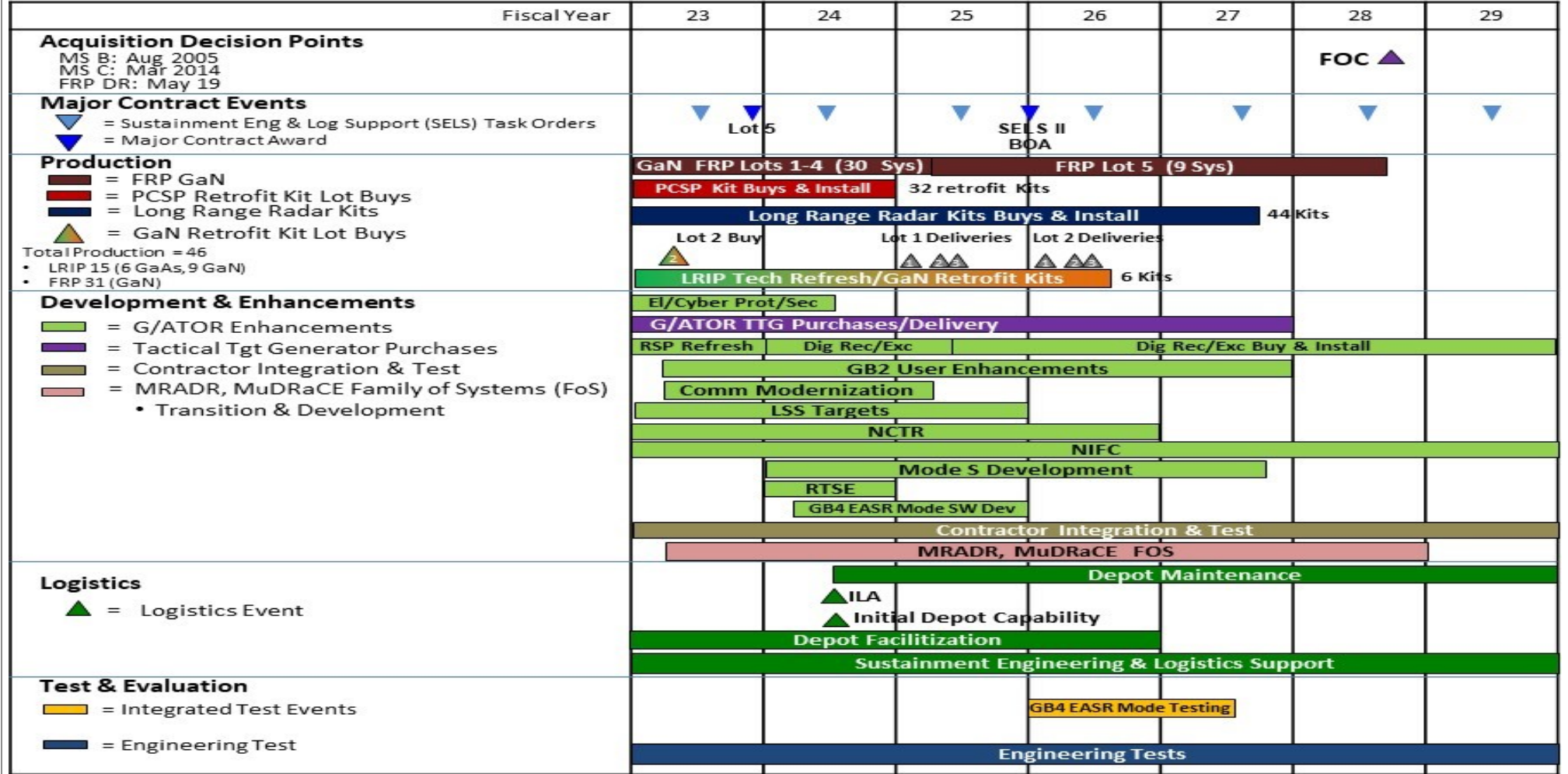
| | Prior Years | FY 2023 | FY 2024 | FY 2025 Base | FY 2025 OCO | FY 2025 Total | Cost To Complete | Total Cost | Target Value of Contract |
|----------------------------|-------------|---------|---------|--------------|-------------|---------------|------------------|------------|--------------------------|
| Project Cost Totals | 543.380 | 49.051 | 92.674 | 51.346 | - | 51.346 | Continuing | Continuing | N/A |

Remarks
Overall, RDT&E funding decreases from FY 2024 to FY 2025, requesting only the funding required to continue to develop Warfighter desired USMC Force Design Capability enhancements, that include NIFC, GB2 User Improvements, LSS Targets, NCTR, Mode S, DREX, GB4 EASR and MuDRaCE, which are all necessary for Radar and Force Survivability in a Peer/Near-Peer Competitor environment.

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Navy **Date:** March 2024

| | | |
|--|--|---|
| Appropriation/Budget Activity 1319 / 7 | R-1 Program Element (Number/Name) PE 0204460M / <i>Ground/Air Task Oriented Radar (G/ATOR)</i> | Project (Number/Name) 9C89 / <i>Marine Ground-Air Radar</i> |
|--|--|---|



UNCLASSIFIED

| | | |
|---|--|---|
| Exhibit R-4A, RDT&E Schedule Details: PB 2025 Navy | | Date: March 2024 |
| Appropriation/Budget Activity 1319 / 7 | R-1 Program Element (Number/Name) PE 0204460M / <i>Ground/Air Task Oriented Radar (G/ATOR)</i> | Project (Number/Name) 9C89 / <i>Marine Ground-Air Radar</i> |

Schedule Details

| Events by Sub Project | Start | | End | |
|---|---------|------|---------|------|
| | Quarter | Year | Quarter | Year |
| Proj 9C89 | | | | |
| Gallium Nitride (GaN) Radar: Gallium Nitride (GaN) Retrofit Kit Procurement Lot 2 | 2 | 2023 | 2 | 2023 |
| Gallium Nitride (GaN) Radar: GaN Retrofit Kits Lot 1 Deliveries | 1 | 2025 | 2 | 2025 |
| Gallium Nitride (GaN) Radar: GaN Retrofit Kits Lot 2 Deliveries | 1 | 2026 | 2 | 2026 |
| Gallium Nitride (GaN) Radar: LRIP Tech Refresh | 1 | 2023 | 3 | 2026 |
| Gallium Nitride (GaN) Radar: GaN FRP Lots 1-4/ FRP Lot 5 | 1 | 2023 | 3 | 2028 |
| Gallium Nitride (GaN) Radar: PCSP Retrofit Kits Buys & Installs | 1 | 2023 | 4 | 2024 |
| Gallium Nitride (GaN) Radar: Long Range Radar Kits Buys & Installs | 1 | 2023 | 3 | 2027 |
| Gallium Nitride (GaN) Radar: Full Operational Capability (FOC) | 4 | 2028 | 4 | 2028 |
| FRP Lot 5 Radar: FRP Lot 5 Contract Award | 4 | 2023 | 4 | 2023 |
| Enhancements: Electronic/Cyber Protection & System Security | 1 | 2023 | 2 | 2024 |
| Enhancements: Tactical Target Generator Procurements/Deliveries | 1 | 2023 | 4 | 2027 |
| Enhancements: GB2 User Enhancements | 2 | 2023 | 4 | 2027 |
| Enhancements: RSP Refresh Development | 1 | 2023 | 4 | 2023 |
| Enhancements: Digital Receiver/Exciter (DREX) Development | 1 | 2024 | 2 | 2025 |
| Enhancements: Digital Receiver/Exciter (DREX) Procurement and Installation | 3 | 2025 | 4 | 2029 |
| Enhancements: Comm Modernization | 2 | 2023 | 1 | 2025 |
| Enhancements: Low, Slow, Small (LSS) Targets | 1 | 2023 | 4 | 2025 |
| Enhancements: Non-Cooperative Target Recognition (NCTR) | 1 | 2023 | 4 | 2026 |
| Enhancements: Naval Integrated Fire Control (NIFC) | 1 | 2023 | 4 | 2029 |
| Enhancements: Mode S Development | 1 | 2024 | 3 | 2027 |
| Enhancements: Contractor Integration & Test | 1 | 2023 | 4 | 2029 |

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Navy **Date:** March 2024

| | | |
|--|--|---|
| Appropriation/Budget Activity 1319 / 7 | R-1 Program Element (Number/Name) PE 0204460M / <i>Ground/Air Task Oriented Radar (G/ATOR)</i> | Project (Number/Name) 9C89 / <i>Marine Ground-Air Radar</i> |
|--|--|---|

| Events by Sub Project | Start | | End | |
|--|----------------|-------------|----------------|-------------|
| | Quarter | Year | Quarter | Year |
| Enhancements: MRADR, MuDRaCE FOS | 2 | 2023 | 4 | 2028 |
| Enhancements: Radar Tracker Software Enhancement (RTSE) | 1 | 2024 | 4 | 2024 |
| Enhancements: G/ATOR Block IV (GB4) EASR Software Development | 2 | 2024 | 4 | 2025 |
| Logistics: Depot Facilitization (LRU Repair & IROAN) | 1 | 2023 | 4 | 2026 |
| Logistics: Sustainment Engineering and Logistics Support (SELS) Contract | 1 | 2023 | 4 | 2029 |
| Logistics: SELS II BOA Contract Award | 1 | 2026 | 1 | 2026 |
| Logistics: ILA | 3 | 2024 | 3 | 2024 |
| Logistics: Initial Depot IROAN Capability | 3 | 2024 | 3 | 2024 |
| Logistics: Depot Maintenance | 3 | 2024 | 4 | 2029 |
| Test & Evaluation: G/ATOR Block IV (GB4) EASR Mode Testing | 1 | 2026 | 3 | 2027 |
| Test & Evaluation: Engineering Tests | 1 | 2023 | 4 | 2029 |