Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Navy	Date: April 2022
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 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	509.026	21.563	45.221	61.422	-	61.422	52.016	39.784	21.873	16.027	Continuing	Continuing
9999: *Congressional Adds*	0.000	0.000	24.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	24.000
9C89: *Marine Ground-Air Radar*	509.026	21.563	21.221	61.422	-	61.422	52.016	39.784	21.873	16.027	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 (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.

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	22.205	21.367	0.000	-	0.000
Current President's Budget	21.563	45.221	61.422	-	61.422
Total Adjustments	-0.642	23.854	61.422	-	61.422
• Congressional General Reductions	-	-0.146			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	24.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.642	0.000			
• Program Adjustments	0.000	0.000	0.000	-	0.000
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000
• Adjustments to Budget Year	-	-	61.422	-	61.422

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Navy	Date: April 2022
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)*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2021	FY 2022
Project: 9999: *Congressional Adds*		
Congressional Add: *AN/TPS-80 G/ATOR Naval Integrated Fire Control*	0.000	12.000
Congressional Add: *AN/TPS-80 G/ATOR Radar Signal Processor Refresh*	0.000	12.000
Congressional Add Subtotals for Project: 9999	0.000	24.000
Congressional Add Totals for all Projects	0.000	24.000

Change Summary Explanation

RDT&E funding increases by $16.201M from FY 2022 to FY 2023 to continue to support the development and integration of software required to implement the full spectrum of Naval Integrated Fire Control (NIFC) and the development of a new Radar Signal Processor (RSP), replacing a 2007 vintage RSP, as well as, initiates both Ground Weapons Locating Radar (GWLR) User Improvements identified during DT/OT and IOT&E testing and the transition of Multi-Domain Radar in a Contested Environment (MuDRaCE), from the Office of Naval Research (ONR), while continuing to pursue software capability improvements providing both Low, Slow, Small (LSS) Target Detection and Non-Cooperative Target Recognition (NCTR).

The FY 2023 funding request was adjusted by $2.240M to account for the availability of prior year execution balances.

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 1319 / 7	R-1 Program Element (Number/Name) PE 0204460M / *Ground/Air Task Oriented Radar (G/ATOR)*	Project (Number/Name) 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	0.000	24.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	24.000
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

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.

Due to an FY 2022 congressional add, RDT&E funding decreases by $24M from FY 2022 to FY 2023. FY 2022 funding initiates the development and integration of software required to implement the full spectrum of Naval Integrated Fire Control (NIFC) and the development of a new Radar Signal Processor (RSP), replacing a 2007 vintage RSP.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022
Congressional Add: AN/TPS-80 G/ATOR Naval Integrated Fire Control ***FY 2021 Accomplishments:*** N/A ***FY 2022 Plans:*** Initiates the first year of software development necessary for all G/ATOR systems to fully integrate Naval Integrated Fire Control (NIFC).	0.000	12.000
Congressional Add: AN/TPS-80 G/ATOR Radar Signal Processor Refresh ***FY 2021 Accomplishments:*** N/A ***FY 2022 Plans:*** Initiates the first year of development necessary to replace the current 2007 era Radar Signal Processor (RSP).	0.000	12.000
Congressional Adds Subtotals	0.000	24.000

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204460M / *Ground/Air Task Oriented Radar (G/ATOR)*	**Project (Number/Name)** 9999 / *Congressional Adds*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The Ground/Air Task Oriented Radar (G/ATOR) acquisition strategy for both Naval Integrated Fire Control (NIFC) and the replacement of a 2007 vintage Radar Signal Processor (RSP) is to award these capability enhancements/improvements as task orders on the Northrup Grumman Mission Systems Sustainment Engineering and Logistics Support (SELS) contract, initially awarded 1Q FY 2021.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204460M / *Ground/Air Task Oriented Radar (G/ATOR)*	**Project (Number/Name)** 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
NAVAL INTEGRATED FIRE CONTROL	C/CPIF	NORTHROP GRUMMAN SYSTEMS CORPORATION : LINTHICUM HEIGHTS, MD	0.000	0.000		10.425	Nov 2022	0.000		-		0.000	0.000	10.425	-
RADAR SIGNAL PROCESSOR REFRESH	C/CPIF	NORTHROP GRUMMAN SYSTEMS CORPORATION : LINTHICUM HEIGHTS, MD	0.000	0.000		10.410	Nov 2022	0.000		-		0.000	0.000	10.410	-
		Subtotal	0.000	0.000		20.835		0.000		-		0.000	0.000	20.835	N/A

Remarks

Product Development funding decreases $20.835M from FY 2022 to FY 2023 due to congressional add. FY 2022 funds initiate the development and integration software required to implement the full spectrum of Naval Integrated Fire Control (NIFC) and the development of a new Radar Signal Processor (RSP), replacing a 2007 vintage RSP.

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
NSWC TECHNICAL SUPPORT	WR	NSWC DAHLGREN : DAHLGREN, VA	0.000	0.000		1.712	May 2022	0.000		-		0.000	0.000	1.712	-
		Subtotal	0.000	0.000		1.712		0.000		-		0.000	0.000	1.712	N/A

Remarks

Government Technical Support funding decreases $1.712M from FY 2022 to FY 2023 due to congressional add. FY 2022 funds initiate development and integration of software required to implement the full spectrum of NIFC and the development of a new RSP.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204460M / *Ground/Air Task Oriented Radar (G/ATOR)*	**Project (Number/Name)** 9999 / *Congressional Adds*

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
MCSC MANAGEMENT SERVICES	Various	MCSC : QUANTICO, VA	0.000	0.000		1.378	Aug 2022	0.000		-		0.000	0.000	1.378	-
TRAVEL	Various	MCSC : QUANTICO, VA	0.000	0.000		0.075	May 2022	0.000		-		0.000	0.000	0.075	-
		Subtotal	0.000	0.000		1.453		0.000		-		0.000	0.000	1.453	N/A

Remarks

Program Office travel funding and management services decreases by $1.453M from FY 2022 to FY 2023 due to congressional add. FY 2022 funding supports the implementation of NIFC and RSP Refresh development.

	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	0.000	0.000		24.000		0.000		-		0.000	0.000	24.000	N/A

Remarks

Due to an FY 2022 congressional add, RDT&E funding decreases by $24M from FY 2022 to FY 2023. FY 2022 funds initiate development and integration of software required to implement the full spectrum of Naval Integrated Fire Control (NIFC) and development of a new Radar Signal Processor (RSP), replacing a 2007 vintage RSP.

Exhibit R-4, **RDT&E Schedule Profile:** PB 2023 Navy		**Date:** April 2022
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204460M / *Ground/Air Task Oriented Radar (G/ATOR)*	**Project (Number/Name)** 9999 / *Congressional Adds*

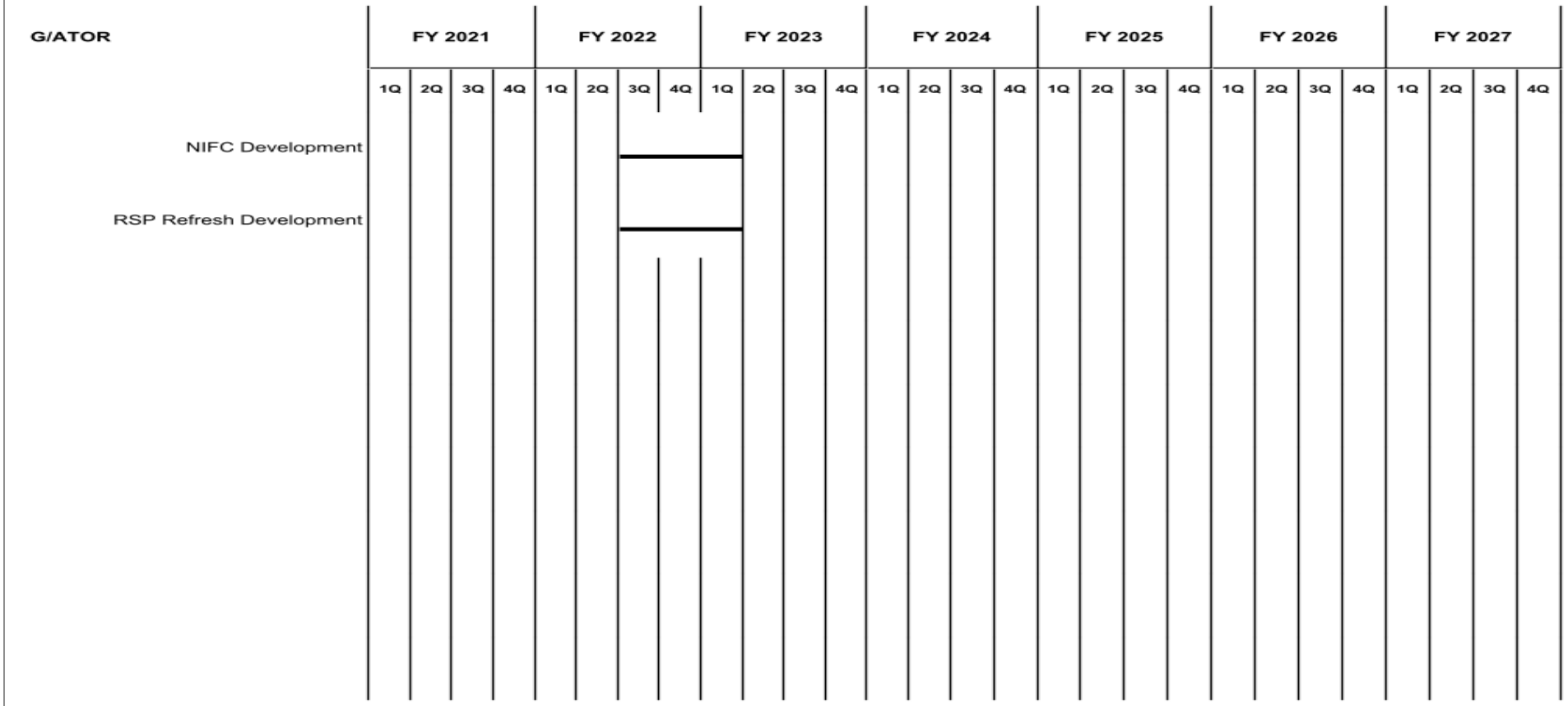

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Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204460M / *Ground/Air Task Oriented Radar (G/ATOR)*	**Project (Number/Name)** 9999 / *Congressional Adds*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
G/ATOR				
NIFC Development: Initiate Naval Integrated Fire Control Development	3	2022	1	2023
RSP Refresh Development: Initiate Radar Signal Processor Refresh Development	3	2022	1	2023

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy			Date: April 2022
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*	

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
9C89: *Marine Ground-Air Radar*	509.026	21.563	21.221	61.422	-	61.422	52.016	39.784	21.873	16.027	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 increases by $40.201M from FY 2022 to FY 2023 in order to continue to support the development and integration of software required to implement the full spectrum of Naval Integrated Fire Control (NIFC) and the development of a new Radar Signal Processor (RSP), replacing a 2007 vintage RSP, as well as, the initiation of Ground Weapons Locating Radar (GWLR) User Improvements identified during DT/OT and IOT&E testing, and the transition of Multi-Domain Radar in a Contested Environment (MuDRaCE), from the Office of Naval Research (ONR), 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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: G/ATOR Contractor Technical, Development Engineering/Block 1 (GB1)	12.904	13.257	41.383	0.000	41.383
Articles:	-	-	-	-	-
FY 2022 Plans: - Continues Electronic Protection, Cyber Protection & Systems Security efforts, as well as, LSS Target Detection software development. - Initiates NCTR software development. - NIFC and RSP Refresh efforts are funded by a Congressional Add in FY 2022.					
FY 2023 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
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*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
- Continue Electronic Protection, Cyber Protection & Systems Security efforts, as well as, NCTR and LSS Target Detection software development. - Continue RSP Refresh development as well as the development and integration of software to implement NIFC. ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** G/ATOR Contractor Technical, Development Engineering Block 1 (GB1) funding increases by $28.126M from FY 2022 to FY 2023 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 and the development of a new RSP necessary to implement Warfighter desired USMC Force Design Capability enhancements.					
Title: G/ATOR Contractor Technical, Development Engineering/Block 2 (GB2) ***Articles:*** ***FY 2022 Plans:*** N/A ***FY 2023 Base Plans:*** - Initiates 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. ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** G/ATOR Contractor Technical, Development Engineering Block 2 funding increases by $2.897M from FY 2022 to FY 2023 to initiate enhancements to GB2 software that were identified during DT, OA and IOT&E.	0.000 -	0.000 -	2.897 -	0.000 -	2.897 -
Title: Multi-Domain Radar in a Contested Environment (MuDRaCE) ***Articles:*** ***FY 2022 Plans:***	0.000 -	0.000 -	4.962 -	0.000 -	4.962 -

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
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*

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 ***FY 2023 Base Plans:*** - Initiates the development of adaptive layers for C2 integration and for near and far range passive detection and air surveillance in spectrum dense environments. ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** A Future Naval Capability (FNC) that has transitioned from the Office of Naval Research (ONR), FY 2023 is the first post-Science & Technology request for MuDRaCe activities. The increase of $4.962M from FY 2022 to FY 2023 will be used 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.					
Title: Government Technical Support	5.313	4.968	8.112	0.000	8.112
Articles:	-	-	-	-	-
Description: 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, 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 enviroments 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.					
FY 2022 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
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*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
- Continues Government support from the following activities to enable program execution: MITRE; NAVAIR; NSWC Dahlgren; NSWC Crane; NAWC-AD China Lake; AIMS and DTIC. - NIFC and RSP Refresh efforts are funded by a congressional add in FY 2022. ***FY 2023 Base Plans:*** - Continue Government support from the following activities to enable program execution: MITRE; NAVAIR; NSWC Dahlgren; NSWC Crane; NAWC-AD China Lake; AIMS; DTIC; - Initiates Government support from NIWC Atlantic in support of MuDRaCE program execution. ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Government Technical Support funding increases by $3.144M from FY 2022 to FY 2023 as G/ATOR continues to enhance Radar and Force Survivability in a Peer/Near-Peer Competitor environment with the continued development of NIFC and the transition of MuDRaCE.					
Title: G/ATOR: Test and Evaluation	3.066	2.721	2.090	0.000	2.090
Articles:	-	-	-	-	-
FY 2022 Plans: - Continue to conduct improved software capability and survivability related engineering testing focusing on Electronic Protection, Cyber Protection and Systems Security. ***FY 2023 Base Plans:*** - Continue to conduct improved software capability and survivability related engineering testing focusing on Electronic Protection, Cyber Protection and Systems Security. ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** G/ATOR Test and Evaluation funding decreases $0.631M from FY 2022 to FY 2023 as G/ATOR continues to move closer towards achieving Full Operational Capability (FOC) in FY 2025.					
Title: G/ATOR: Management Services & Travel	0.280	0.275	1.978	0.000	1.978
Articles:	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
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*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
FY 2022 Plans: - Continues program office travel in support of system development and related engineering test events. - NIFC and RSP Refresh efforts are funded by a Congressional Add in FY 2022. ***FY 2023 Base Plans:*** - Continue to provide program office travel in support of system development and management services related to engineering test events. - Continues RDT&E related engineering, management, logistics program office support and travel for RSP Refresh and NIFC. - Initiates MuDRaCE transition. ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Program Office travel funding and management services increases by $1.703M from FY 2022 to FY 2023 to support RSP Refresh, NIFC and MuDRaCE.					
Accomplishments/Planned Programs Subtotals	21.563	21.221	61.422	0.000	61.422

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
• RDTE/0604504N/0718: *AIR CONTROL MATCALS*	3.186	3.136	3.020	-	3.020	3.012	2.866	2.925	2.985	Continuing	Continuing
• PMC/7000: *INITIAL SPARES-G/ATOR*	13.506	13.609	14.422	-	14.422	14.802	15.118	15.387	15.665	Continuing	Continuing
• PMC/4655: *GROUND/AIR TASK ORIENTED RADAR*	276.673	339.369	61.943	-	61.943	65.339	72.141	55.026	56.529	Continuing	Continuing

Remarks

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 Air Traffic Control (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

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
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*

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 Full Rate Production (FRP) Contract with NGMS awarded in June 2019. G/ATOR enhancements include a three-phased Electronic Protection, Cyber Protection and Systems Security effort, Radar Emplacement/Displacement improvements, G/ATOR Block I Tactical Target Generators (Decoys), Low-Slow-Small (LSS) Target Detection, Non-Cooperative Target Recognition (NCTR), Naval Integrated Fire Control (NIFC), Communications Modernization, Long Range Radar (LRR) Kits, replacement of a 2007 vintage Radar Signal Processor (RSP) and the implementation of Multi-Domain Radar in a Contested environment (MuDRaCE), 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.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy			Date: April 2022
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*	

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
G/ATOR Block 1	C/CPIF	NORTHROP GRUMMAN SYSTEMS CORPORATION : LINTHICUM HEIGHTS, MD	240.229	12.904	Dec 2020	13.257	Dec 2021	42.789	Dec 2022	-		42.789	Continuing	Continuing	Continuing
G/ATOR Block 2	C/CPIF	NORTHROP GRUMMAN SYSTEMS CORPORATION : LINTHICUM HEIGHTS, MD	67.895	0.000		0.000		2.897	Jan 2023	-		2.897	Continuing	Continuing	Continuing
MuDRaCE	TBD	TBD : TBD	0.000	0.000		0.000		4.962	Feb 2023	-		4.962	Continuing	Continuing	Continuing
		Subtotal	308.124	12.904		13.257		50.648		-		50.648	Continuing	Continuing	N/A

Remarks

G/ATOR Product Development funding increases by $37.391M from FY 2022 to FY 2023 in order to continue to develop Warfighter desired USMC Force Design Capability enhancements, that include NIFC and RSP Refresh, as well as, initiate GB2 User Improvements and MuDRaCE, which are all necessary for Radar and Force Survivability in a Peer/Near-Peer Competitor environment.

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
FFRDC TECHNICAL SUPPORT	FFRDC	MITRE : BOSTON, MA	7.930	1.175	Dec 2020	1.155	Dec 2021	1.154	Dec 2022	-		1.154	Continuing	Continuing	Continuing
NSWC TECHNICAL SUPPORT	WR	NSWC DAHLGREN : DAHLGREN, VA	48.737	1.448	Dec 2020	1.244	Dec 2021	2.509	Dec 2022	-		2.509	Continuing	Continuing	Continuing
NSWC TECHNICAL SUPPORT	WR	NSWC CRANE : CRANE, IN	4.301	1.282	Dec 2020	1.277	Dec 2021	1.274	Dec 2022	-		1.274	Continuing	Continuing	Continuing
NAVAIR TECHNICAL SUPPORT	WR	NAWC AD : CHINA LAKE, CA	0.115	0.020	Dec 2020	0.020	Dec 2021	0.020	Dec 2022	-		0.020	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy			Date: April 2022
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)

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
NAVAIR TECHNICAL SUPPORT	WR	NAVAIR : PAX RIVER, MD	5.323	0.781	Dec 2020	0.740	Dec 2021	0.639	Dec 2022	-		0.639	Continuing	Continuing	Continuing
NSWC TECHNICAL SUPPORT	WR	NWSC-IH : INDIAN HEAD, MD	1.617	0.067	Dec 2020	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
AIMS TECHNICAL SUPPORT	WR	AIMS : ROBINS AFB, GA	1.015	0.256	Dec 2020	0.252	Dec 2021	0.244	Dec 2022	-		0.244	Continuing	Continuing	Continuing
DTIC TECHNICAL SUPPORT	WR	DTIC : FT BELVOIR, VA	1.360	0.284	Dec 2020	0.280	Dec 2021	0.262	Dec 2022	-		0.262	Continuing	Continuing	Continuing
NIWC TECHNICAL SUPPORT	WR	NIWC LANT : NORTH CHARLESTON, SC	0.000	0.000		0.000		1.267	Dec 2022	-		1.267	0.000	1.267	-
Prior Years Cumulative Funding	Various	N/A : N/A	20.986	0.000		0.000		0.000		-		0.000	0.000	20.986	-
		Subtotal	91.384	5.313		4.968		7.369		-		7.369	Continuing	Continuing	N/A

Remarks

Award dates reflected are the actual obligation date for the first incremental award. Most activities, excluding MITRE are incrementally funded throughout the fiscal year.
Government Technical Support funding increases by $2.401M from FY 2022 to FY 2023 as G/ATOR continues to enhance Radar and Force Survivability in a Peer/Near-Peer Competitor environment with the continued implementation of NIFC, an FY 2022 congressional add and initiation of MuDRaCE.

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
PRIME CONTRACTOR TEST SUPPORT	C/CPIF	NORTHROP GRUMMAN SYSTEMS CORPORATION : LINTHICUM HEIGHTS, MD	17.926	0.844	Dec 2020	0.783	Dec 2021	0.626	Dec 2022	-		0.626	Continuing	Continuing	Continuing
TEST SUPPORT	WR	NSWC DAHLGREN : DAHLGREN, VA	11.687	0.466	Dec 2020	0.260	Dec 2021	0.253	Dec 2022	-		0.253	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy			Date: April 2022
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*	

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
TEST PLANNING/ SUPPORT	Various	NSWC-FALLBROOK : CPEN, CA	10.097	0.275	Dec 2020	0.215	Dec 2021	0.207	Dec 2022	-		0.207	Continuing	Continuing	Continuing
TEST PLANNING/ SUPPORT	Various	NSWC CRANE : CRANE, IN	1.880	0.305	Dec 2020	0.255	Dec 2021	0.228	Dec 2022	-		0.228	0.000	2.668	-
TEST SUPPORT	Various	NSWC CORONA : CORONA, CA	8.043	0.225	Dec 2020	0.199	Dec 2021	0.122	Dec 2022	-		0.122	Continuing	Continuing	Continuing
TEST PLANNING/ SUPPORT	Various	NSWC PHD : DAM NECK, VA	6.796	0.226	Dec 2020	0.204	Dec 2021	0.157	Dec 2022	-		0.157	Continuing	Continuing	Continuing
TEST OPERATOR SUPPORT	Various	MARFOR : Various	1.757	0.125	Dec 2020	0.105	Dec 2021	0.102	Dec 2022	-		0.102	Continuing	Continuing	Continuing
TEST RANGE SUPPORT	MIPR	YPG : YUMA, AZ	3.299	0.375	Dec 2020	0.000		0.000		-		0.000	0.000	3.674	-
TEST FACILITY SUPPORT	WR	SCSC : WALLOPS IS, MD	0.630	0.000		0.200	Jan 2022	0.197	Jan 2023	-		0.197	0.000	1.027	-
TEST FACILITY SUPPORT	WR	MCB 29 PALMS : 29 PALMS, CA	1.757	0.225	Dec 2020	0.000		0.000		-		0.000	0.000	1.982	-
TEST RANGE SUPPORT	MIPR	WSMR : OTERO, NM	0.000	0.000		0.250	Jan 2022	0.198	Jan 2023	-		0.198	0.000	0.448	-
TEST RANGE SUPPORT	MIPR	DUGWAY AFB : DUGWAY, AZ	0.000	0.000		0.250	Jan 2022	0.000	Jan 2023	-		0.000	0.000	0.250	-
Prior Years Cumulative Funding	Various	N/A : N/A	33.025	0.000		0.000		0.000		-		0.000	0.000	33.025	-
		Subtotal	96.897	3.066		2.721		2.090		-		2.090	Continuing	Continuing	N/A

Remarks

Award dates reflected are the actual obligation date for the first incremental award. G/ATOR Test and Evaluation funding decreases $0.631M from FY 2022 to FY 2023 as G/ATOR continues to move closer towards achieving Full Operational Capability (FOC) in FY 2025.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy		Date: April 2022
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*

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	MCSC : QUANTICO, VA	2.010	0.280	Sep 2021	0.275	Sep 2022	0.350	Sep 2023	-		0.350	Continuing	Continuing	Continuing
MCSC MANAGEMENT SERVICES	Various	MCSC : MCSC - QUANTICO, VA	10.611	0.000		0.000		0.965	Feb 2023	-		0.965	Continuing	Continuing	Continuing
		Subtotal	12.621	0.280		0.275		1.315		-		1.315	Continuing	Continuing	N/A

Remarks

Program Office travel funding and management services increases by $1.040M from FY 2022 to FY 2023 to continue to develop Warfighter desired USMC Force Design Capability enhancements, that include NIFC and RSP Refresh, as well as, the initiation of GB2 User Improvements and MuDRaCE.

	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	509.026	21.563		21.221		61.422		-		61.422	Continuing	Continuing	N/A

Remarks

Overall, RDT&E funding increases by $40.201M from FY 2022 to FY 2023 to continue to develop Warfighter desired USMC Force Design Capability enhancements, that include NIFC and RSP Refresh, as well as, the initiation of GB2 User Improvements and MuDRaCE, which are all necessary for Radar and Force Survivability in a Peer/Near-Peer Competitor environment.

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy		Date: April 2022
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*

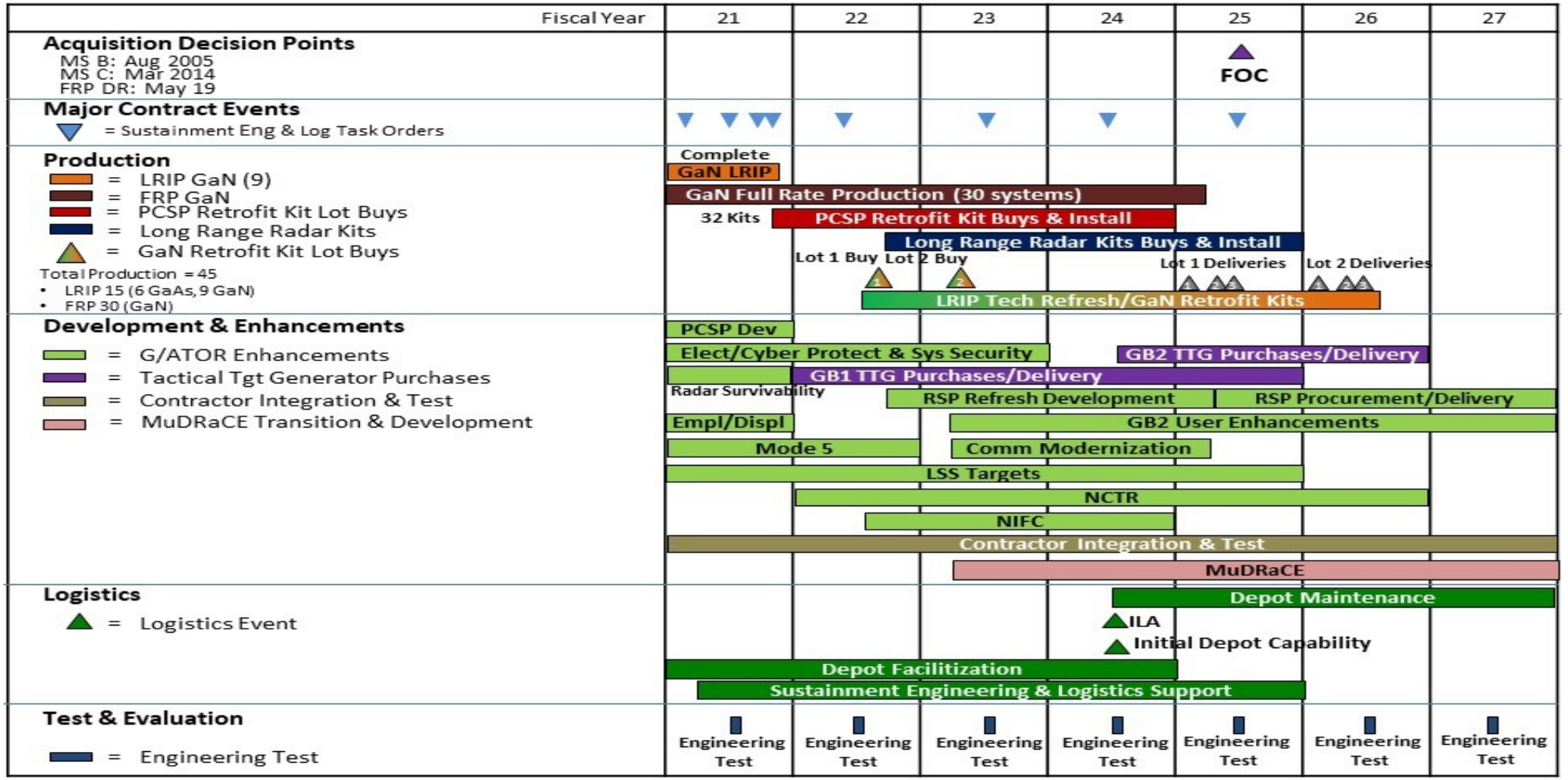

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204460M / *Ground/Air Task Oriented Radar (G/ATOR)*	**Project (Number/Name)** 9C89 / *Marine Ground-Air Radar*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 9C89				
Gallium Arsenide (GaAs) Radar: Gallium Nitride (GaN) Retrofit Kit Procurement Lot 1	3	2022	3	2022
Gallium Arsenide (GaAs) Radar: Gallium Nitride (GaN) Retrofit Kit Procurement Lot 2	2	2023	2	2023
Gallium Arsenide (GaAs) Radar: GaN Retrofit Kits Lot 1 Deliveries	1	2025	2	2025
Gallium Arsenide (GaAs) Radar: GaN Retrofit Kits Lot 2 Deliveries	1	2026	2	2026
Gallium Arsenide (GaAs) Radar: LRIP Tech Refresh	3	2022	3	2026
Gallium Nitride (GaN) Radar: Complete GaN LRIP	1	2021	4	2021
Gallium Nitride (GaN) Radar: FRP	1	2021	2	2025
Gallium Nitride (GaN) Radar: Engineering Test 5	3	2021	3	2021
Gallium Nitride (GaN) Radar: Engineering Test 6	3	2022	3	2022
Gallium Nitride (GaN) Radar: Engineering Test 7	3	2023	3	2023
Gallium Nitride (GaN) Radar: PCSP Retrofit Kits Buys & Installs	4	2021	4	2024
Gallium Nitride (GaN) Radar: Long Range Radar Kits Buys & Installs	4	2022	4	2025
Gallium Nitride (GaN) Radar: Engineering Test 8	3	2024	3	2024
Gallium Nitride (GaN) Radar: Full Operational Capability (FOC)	2	2025	2	2025
Gallium Nitride (GaN) Radar: Engineering Test 9	3	2025	3	2025
Gallium Nitride (GaN) Radar: Engineering Test 10	3	2026	3	2026
Gallium Nitride (GaN) Radar: Engineering Test 11	3	2027	3	2027
Enhancements: Electronic/Cyber Protection & System Security	1	2021	4	2023
Enhancements: Radar Survivability	1	2021	4	2021
Enhancements: GB1 Tactical Target Generator Procurements/Deliveries	1	2022	4	2025
Enhancements: GB2 Tactical Target Generator Procurements/Deliveries	3	2024	4	2026

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy		Date: April 2022
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*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Enhancements: GB2 User Enhancements	2	2023	4	2027
Enhancements: Pallet Communications Support Processor (PCSP) Development	1	2021	4	2021
Enhancements: RSP Refresh Development	3	2022	2	2025
Enhancements: RSP Procurement/Delivery	2	2025	4	2027
Enhancements: Comm Modernization	2	2023	1	2025
Enhancements: Emplacement/Displacement	1	2021	4	2021
Enhancements: Mode 5	1	2021	4	2022
Enhancements: Low, Slow, Small (LSS) Targets	1	2021	4	2025
Enhancements: Non-Cooperative Target Recognition (NCTR)	1	2022	4	2026
Enhancements: Naval Integrated Fire Control (NIFC)	3	2022	4	2024
Enhancements: Contractor Integration & Test	1	2021	4	2027
Enhancements: MuDRaCE	2	2023	4	2027
Logistics: Depot Facilitzation (LRU Repair & IROAN)	1	2021	4	2024
Logistics: Sustainment Engineering and Logistics Support Contract	1	2021	4	2025
Logistics: ILA	3	2024	3	2024
Logistics: Initial Depot IROAN Capability	3	2024	3	2024
Logistics: Depot Maintenance	3	2024	4	2027