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Department of Defense  
OFFICE OF PREPUBLICATION AND SECURITY REVIEW

## **Selected Acquisition Report (SAR)**



## **Ground/Air Task Oriented Radar (G/ATOR)**

FY 2024 President's Budget

Defense Acquisition Visibility Environment  
(DAVE)

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## Common Acronyms and Abbreviations

\$B - Billions of Dollars  
\$K - Thousands of Dollars  
\$M - Millions of Dollars  
ACAT - Acquisition Category  
Acq O&M - Acquisition-Related Operations and Maintenance  
ADM - Acquisition Decision Memorandum  
APB - Acquisition Program Baseline  
APPN - Appropriation  
APUC - Average Procurement Unit Cost  
BA - Budget Authority/Budget Activity  
Blk - Block  
BY - Base Year  
CAPE - Cost Assessment and Program Evaluation  
CARD - Cost Analysis Requirements Description  
CDD - Capability Development Document  
CLIN - Contract Line Item Number  
CPD - Capability Production Document  
CY - Calendar Year  
DAB - Defense Acquisition Board  
DAE - Defense Acquisition Executive  
DAMIR - Defense Acquisition Management Information Retrieval  
DoD - Department of Defense  
DSN - Defense Switched Network  
EMD - Engineering and Manufacturing Development  
EVM - Earned Value Management  
FMS - Foreign Military Sales  
FOC - Full Operational Capability  
FRP - Full Rate Production  
FY - Fiscal Year  
FYDP - Future Years Defense Program  
ICE - Independent Cost Estimate  
Inc - Increment  
IOC - Initial Operational Capability  
JROC - Joint Requirements Oversight Council  
KPP - Key Performance Parameter  
LRIP - Low Rate Initial Production  
MDA - Milestone Decision Authority  
MDAP - Major Defense Acquisition Program  
MILCON - Military Construction  
N/A - Not Applicable  
O&M - Operations and Maintenance  
O&S - Operating and Support  
ORD - Operational Requirements Document  
OSD - Office of the Secretary of Defense  
PAUC - Program Acquisition Unit Cost  
PB - President's Budget

PE - Program Element  
PEO - Program Executive Officer  
PM - Program Manager  
POE - Program Office Estimate  
RDT&E - Research, Development, Test, and Evaluation  
SAR - Selected Acquisition Report  
SCP - Service Cost Position  
TBD - To Be Determined  
TY - Then Year  
U.S. - United States  
UCR - Unit Cost Reporting  
USD(A&S) - Under Secretary of Defense (Acquisition and Sustainment)  
USD(AT&L) - Under Secretary of Defense (Acquisition, Technology and Logistics)

## Program Information

### Program Name

Ground/Air Task Oriented Radar

### DoD Component

Navy

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## Responsible Office

### Program Manager

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## **Mission and Description**

The Ground/Air Task Oriented Radar (G/ATOR) is a single material solution for the mobile Multi-Role Radar System and Ground Weapons Locating Radar (GWLR) requirements. It is a three-dimensional, short/medium range multi-role radar designed to detect unmanned aerial systems, cruise missiles, air breathing targets, rockets, artillery, and mortars. G/ATOR satisfies the warfighter's expeditionary needs across the Marine Air Ground Task Force spectrum replacing five legacy radar systems with a single solution. The Air Defense/ Surveillance Radar G/ATOR Block 1 provides capabilities in the Short Range Air Defense and Air Surveillance mission areas: GWLR G/ATOR Block 2 will address Counter-fire Targeting Missions; and Expeditionary Airport Surveillance Radar G/ATOR Block 4 will address Air Traffic Control missions. G/ATOR Block 4 is not included in the Acquisition Program Baseline. Resourcing may be included in future budget builds. G/ATOR provides real-time radar measurement data to the Common Aviation Command and Control System, Composite Tracking Network, and Advanced Field Artillery Tactical Data System.

## Executive Summary

### G/ATOR

#### Program Highlights Since Last Report

The program is currently in FRP. The FRP Decision was held and the FRP Contract awarded in June 2019. The program continues to field to the fleet. The G/ATOR program has fielded 23 units horizontally across all three USMC Marine Expeditionary Forces. Follow on production continues with the award of FRP Lot 1 in June 2019 and Lot 2 December 2019. The final award of FRP Lot 3 in March 2021 and Lot 4 in December 2021. G/ATOR Block 4 was not initially included in the APB. PB 2024 funded 8 of 12 Block 4 systems. There are no significant software-related issues with this program at this time.

#### History of Significant Developments Since Program Initiation

History of Significant Developments Since Program Initiation	
Date	Significant Development Description
Dec - 2022	The G/ATOR FRP contract was awarded on 07 Jun 2019. The program is currently in Full Rate Production. As of December 22, 2021 all four lots of the FRP procurement contract have been exercised. FY22 Fielding - FRP Lot 1 units to MACS-24, MACS-2, 3d LAAB, MCTSSA, USMC Det Ft Sill. There are no significant software-related issues with this program at this time.

## Schedule

### G/ATOR

Events	Milestone Baseline Objective	Current Baseline Objective/Threshold		Current Estimate/Actual	Deviation
G/ATOR-Milestone B (1)	Aug 2005	Aug 2005	Aug 2005	Aug 2005	
G/ATOR-Milestone C (2)	Mar 2014	Mar 2014	Mar 2014	Mar 2014	
G/ATOR-Initial Operational Test & Evaluation	Oct 2018	Dec 2018	Dec 2018	Dec 2018	
G/ATOR-FRP Decision	Mar 2019	Jun 2019	Jun 2019	Jun 2019	
G/ATOR-FOC (Start)				Jun 2026	
G/ATOR-FOC		Jan 2025	Jul 2025	Aug 2027	
AD/SR (GB1)-Operational Assessment (1)	Aug 2016	Oct 2017	Oct 2017	Oct 2017	
AD/SR (GB1)-IOC (1)	Feb 2017	Feb 2018	Feb 2018	Feb 2018	
GWLR (GB2)-IOC (3)	Feb 2018	Mar 2019	Mar 2019	Mar 2019	
GWLR (GB2)-Operational Assessment (2)	Oct 2017	May 2018	May 2018	May 2018	

#### Notes

None. There are no known significant Schedule or Technical risks with this program at this time. The system is currently undergoing Full Rate Production.

**Deviation Explanation**





## Performance

### G/ATOR

Performance Characteristics					
Milestone Baseline	Current Baseline Objective/Threshold		Demonstrated Performance	Current Estimate/Actual	Deviation
<b>(KPP)AD/SR (GB1) - Combat Identification (Block 1) (Applicable to Block 4) (1)</b>					
	(Threshold=Objective) AD/SR's IFF system shall be compatible with MK XII IFF systems (Modes 1, 2, 3/A, C, 4).	AD/SR's IFF system shall be compatible with MK XII IFF systems (Modes 1, 2, 3/A, C, 4).	MET per AIMS platform certification	AD/SR's IFF system shall be compatible with MK XII IFF systems (Modes 1, 2, 3/A, C, 4).	
<b>(KPP)AD/SR (GB1) - Combat Identification (Block 1) (Applicable to Block 4) (2)</b>					
	Integrate IFF Mode 5 (Level 3) and Mode S (Level 3)	Growth - Block 4. AD/SR shall integrate MK XIIA IFF Mode 5 (Level 2) capabilities and Mode S (level 2)	On track to meet by 30 Jun 2020.	Integrate IFF Mode 5 (Level 3) and Mode S (Level 3)	
<b>([attribute type not provided])GWLR (GB2) - Hostile Weapon Location (range in (m))</b>					
	The CEP50 of weapon location shall be less than the greater of 30m or 0.252% of range for at least 90% (threshold) of the cases in the shot array in the defined nominal environment.	The CEP50 of weapon location shall be less than the greater of 30m or 0.252% of range for at least 80% (objective) of the cases in the shot array in the defined nominal environment.	MET 96%	The CEP50 of weapon location shall be less than the greater of 30m or 0.252% of range for at least 80% (objective) of the cases in the shot array in the defined nominal environment.	
<b>(KPP)AD/SR (GB1) - Information Element: Air Track Data Measure: Dissemination of target biographic and physical data Measure: Receipt of HVT data Measure: Latency of data Measure: Strength of encryption Conditions: Tactical/Geopolitical</b>					

	Non Permissive	Data: Date and time, Azimuth, range, elevation, time, size, speed and IFF NRT Data Rate: -524 Kbps TFOCA-11 Not Encrypted EPLRS: Communication / Transmission Integrated Circuit (CTIC), CTIC DS-101 Hybrid (CDH) Permissive	MET per JITC's joint interoperability certification of the USMC AN/TPS-80/GATOR Block 1 software version 1.7.0.1.0	Non Permissive	
<b>(KPP)AD/SR (GB1) - Materiel Availability</b>					
	Materiel Availability The AD/SR shall have a Materiel Availability of 0.90 (Objective)	Materiel Availability The AD/SR shall have a Materiel Availability of 0.85 (Threshold)	Not Yet Evaluated until FOC with fully integrated supporting organizations.	Materiel Availability The AD/SR shall have a Materiel Availability of 0.90 (Objective)	
<b>(KPP)GWLR (GB2) - Materiel Availability</b>					
	Materiel Availability The GWLR shall have a Materiel Availability of 0.90 (Objective)	Materiel Availability The GWLR shall have a Materiel Availability of 0.85 (Threshold)	Not Yet Evaluated until FOC with fully integrated supporting organizations.	Materiel Availability The GWLR shall have a Materiel Availability of 0.90 (Objective)	
<b>(KPP)AD/SR (GB1) - Network: Direct Fiber to TAOM, CAC2S or CTN Measure: Time to connect to an operational network from power up Conditions: Network connectivity Network: EPLRS to TAOM or CAC2S</b>					
	30 min Reconfigure from transport to full operation 30 min	60 min Reconfigure from transport to full operation 60 min	MET 27.5 mins	30 min Reconfigure from transport to full operation 30 min	
<b>(KPP)AD/SR (GB1) - Operational availability (1)</b>					
	Operational availability The AD/SR shall have an Ao of 0.95 (Objective)	Operational availability The AD/SR shall have an Ao of 0.90 (Threshold)	MET .99 at DT1E1	Operational availability The AD/SR shall have an Ao of 0.95 (Objective)	
<b>(KPP)GWLR (GB2) - Operational availability (2)</b>					
	Operational availability The GWLR shall have an Ao of 0.95 (Objective)	Operational availability The GWLR shall have an Ao of 0.90 (Threshold)	MET .96 at DT1E2 and .93 at IOT&E	Operational availability The GWLR shall have an Ao of 0.95 (Objective)	
<b>([attribute type not provided])GWLR (GB2) - Probability of location (acquisition)</b>					

	<p>Assuming no targets in track, 0.97 for at least 90% of the cases in the shot array with +/-800 mils coverage (1600 mils total) with the radar in either normal or extended range operating mode in the defined nominal environment.</p>	<p>Assuming no targets in track, 0.90 for at least 90% of the cases in the shot array with +/-800 mils coverage (1600 mils total) with the radar in either normal or extended range operating mode in the defined nominal environment.</p>	<p>MET 93%</p>	<p>Assuming no targets in track, 0.90 for at least 90% of the cases in the shot array with +/-800 mils coverage (1600 mils total) with the radar in either normal or extended range operating mode in the defined nominal environment.</p>	
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**Requirement Reference**

Validated:  
 CPD (GB1) dated December 3, 2012 and CPD (GB2) dated April 4, 2019

**Deviation Explanation**

No deviations for this program/subprogram

**Notes**

Both CPDs approved by the Marine Requirements Oversight Council (MROC) and validated by the Joint Requirements Oversight Council (JROC).

## Acquisition Budget Estimate

### G/ATOR

#### *Total Acquisition Cost*

		Milestone APB	Current Baseline		Budget Estimate PB 2024		
Category	Base Year	Objective (BY\$M)	Objective (BY\$M)	Threshold (BY\$M)	BY\$M	TY\$M	Deviation
RDT&E	2012	986.5	1,042	1,146.2	1,106.4	1,159.9	
Procurement	2012	1,625.3	1,711.5	1,882.7	1,997	2,383.2	
MILCON	2012	3.5	0	0	0	0	
Acq. O&M	2012	0	0	0	0	0	
<b>Total</b>		<b>2,615.3</b>	<b>2,753.5</b>		<b>3,103.4</b>	<b>3,543.1</b>	
PAUC	2012	58.118	61.189	67.308	58.555	66.851	
APUC	2012	36.118	38.033	41.836	37.679	44.966	

### Appropriation Category Deviation Explanations

#### PAUC Deviation Explanation

#### APUC Deviation Explanation

#### Budget Notes

Current APB Cost Estimate Reference Source Documents: Full Rate Production Decision Program Office Estimate for Ground/Air Task Oriented Radar (G/ATOR); Naval Center for Cost Analysis Independent Cost Estimate (ICE) for AN/TPS-80 of 29 April 2019. The Total Acquisition Costs include fact-of-life changes through PB-23.

#### *Total End Item Quantity*

Quantity Category	Current APB Quantity	Current Estimate Quantity
Development	0	0
Procurement	45	53
O&M-Acquired		

#### Quantity Notes

The Production (Current) APB PAUC and APUC are based on 45 units. The Development APB PAUC and APUC were based on 57 units of which twelve (12) were not funded. PB 24 funded 8 of the 12 remaining systems bringing the current funded systems to 53.

## Unit Cost

### G/ATOR

#### Current UCR Baseline and Current Estimate (Base-Year Dollars)

Category (\$M) Base Year:2012	Current UCR Baseline	Current Estimate	% Change
<b>Program Acquisition Unit Cost</b>			
Cost	2,753.5	3,103.4	
Quantity	45	53	
Unit Cost	61.189	58.555	-4.31%
<b>Average Procurement Unit Cost</b>			
Cost	1,711.5	1,997.0	
Quantity	45	53	
Unit Cost	38.033	37.679	-0.93%

#### Original UCR Baseline and Current Estimate (Base-Year Dollars)

Category (\$M) Base Year:2012	Original UCR Baseline	Current Estimate	% Change
<b>Program Acquisition Unit Cost</b>			
Cost	2,987.3	3,103.4	
Quantity	57	53	
Unit Cost	52.409	58.555	11.73%
<b>Average Procurement Unit Cost</b>			
Cost	2,103.1	1,997.0	
Quantity	57	53	
Unit Cost	36.896	37.679	2.12%

#### Cost Growth Details

**Current Baseline PAUC Breach Explanation**

**Current Baseline APUC Breach Explanation**

**Original Baseline PAUC Breach Explanation**

**Original Baseline APUC Breach Explanation**

**Impacts of Schedule Changes on Unit Cost**

**Impacts of Performance Changes on Unit Cost**

**Actions Taken or Proposed to Control Future Cost Growth**

***Risk and Sensitivity Analysis*****G/ATOR****Risk and Sensitivity Analysis****Current Procurement Cost(December - 2022)****Original Baseline Estimate (May - 2012)**

The original baseline estimate was developed after G/ATOR was officially designated as an ACAT IC program by ASN (RDA). The estimate was based on a production quantity of 57 (of which only 45 were funded) and supported an FY 2024 FOC.

**Current Baseline Estimate (June - 2019)**

The current baseline estimate reflects the Service Cost Position (SCP) that the Naval Center for Cost Analysis (NCCA) developed in support of the Full Rate Production (FRP). The SCP was also used as the basis for the June 2019 Acquisition Program Baseline (APB). The estimate is based on a production quantity of 45 and supports an FOC of FY 2025.



Schedule Risk		
Technical Risks		
Current	December 18, 2022	Inspect and Repair Only As Necessary Depot Core Capability Will Not Be Established IAW Title 10 USC 2464: Core Log Capabilities: If Tobyhanna Army Depot is not properly tasked and resourced, then G/ATOR Depot Core Capability-IROAN will not be established by 4QFY23 and will not meet statutory requirement of Title 10 USC 2464: Core Logistics Capabilities. Funding decrease from FY 2023 to FY 2024 as G/ATOR defers the completion of IROAN Depot repairs at Tobyhanna Army Depot to FY24.

## Low Rate Initial Production

### G/ATOR

Item	Initial LRIP Decision	Current Total LRIP
Approval Date	03/10/2014	08/08/2016
Approved Quantity	14	15
Reference	MS C ADM	Justification and Authorization (J&A) No. 15077 Amendment (1)
Start Year	2014	2014
End Year	2018	2018

#### Rationale if quantity exceeds 10% of the total number of articles to be procured:

The Current Total LRIP Quantity is more than 10% of the total production quantity due to the MDA authorization of additional LRIP units to mitigate risk associated with conversion from Gallium Arsenide to Gallium Nitride technology and associated testing (no change to total Approved Acquisition Objective quantity).

#### Notes

**Contracts & Efforts**

Contract Data	
Contract Number	M6785-19-C-0043
Effort Number	
Modification Number	P00036
Award Date	06/07/2019
Definitization Date	12/22/2021
Order Number	
CAGE Code/CAGE Legal Name	2S209/Northrop Grumman Systems Corporation
Contract Title	Full Rate Production (FRP)
Contract Address	Linthicum Heights, MD
Contracting Office	Marine Corps System Command
Supported Phase	Production
Contract Strategy	FAR 15 (Negotiated)
Contract Type	Firm-Fixed-Price
Modification Date	February 09, 2023
Work Start Date	June 07, 2019
Technical Data Rights	Limited Rights to Technical Data--Non-Commercial Items Only
Work Completed	

Contracts/Effort Price, Quantity, and Performance (TY\$M)		
Initial Target Price	Current Target Price	
\$963,173,943.1	\$963,173,943.1	
Initial Ceiling Price	Current Ceiling Price	
\$958,049,562	\$998,013,684.5	
Contractor EAC	PM EAC	
	\$1,559,017,620	
Initial Quantity	Current Quantity	Delivered Quantity
45	45	20
BAC	BCWP	ACWP

BCWS	Cost Variance	Schedule Variance

**Contract Notes:**

**Factors Contributing to Cost Variance and Projected Effects on Program Costs**

**Factors Contributing to Schedule Variance and Projected Effects on Program Schedule**

### External Government Activities

Activity Title		Government Entity		Supported Phase
CAGE		Work Start Date		
City		State/Province:		
Notes				

## Deliveries and Expenditures

### G/ATOR

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development				
Production	53	23	53	43.40%
Total Program Quantity Delivered				
	53	23	53	43.40%

### Expended and Appropriated (TY \$M)

Years Appropriated to date: 18

Total Years Appropriated Funding (Current Baseline): 53

Percent Years Appropriated: 33.96%

Then-Year Funding Appropriated as Percentage of Total Acquisition Estimate: 0.00%

Then-Year Funding Expended as Percentage of Total Acquisition Estimate: 0.00%

Total Acquisition Cost: 3,543.1

#### Deliveries & Expenditures Notes:

The above data is current as of March 3, 2023.

## Operating and Support Costs

G/ATOR

### O&S Cost Breakdown:

Category (BY\$ Million)	GATOR
Unit-Level Manpower	179.3
Unit Operations	9.4
Maintenance	1,182.3
Sustaining Support	308.2
Continued System Improvements	269.0
Other	56.1
<b>Total</b>	<b>2,004.3</b>

Cost Estimate Source: POE dated December 30, 2022

O&S Cost Notes:

Total Program O&S Cost Compared with Baseline					
	Current Baseline		Current Estimate (BY\$M)	Current Estimate (TY\$M)	Deviation
	Objective (BY\$M)	Threshold (BY\$M)			
<b>Total O&amp;S</b>	2,124.8	2,337.3	2,004.3	3,072.4	

Note:

The Program Lifecycle Cost Estimate (PLCCE) is dated December 2022 aligned to PB23 with fact-of-life changes.

### O&S Cost Deviation Explanation

## ***Operating and Support Costs - Disposal and Unitized Costs***

G/ATOR

### **Annual Unitized O&S Cost Definition and Calculation Relative to Total O&S Cost:**

There is no data in the Naval Visibility and Management of Operating & Support Costs database for the antecedent system. The sustainment strategy includes organic support with contract support for the depot level. Current Product Support Strategy employs Contractor Logistics Support (CLS) during the EMD phase to provide support for the two Engineering Development Models and up to 15 LRIP systems though Interim CLS on the Gallium Nitride and FRP Contracts. During production some components may remain under CLS, others may transition to Performance Based Logistics and others may transition to traditional organic support.

Sustainment Factors	System Name: Ground/Air Task Oriented Radar (G/ATOR)	Antecedent System Name: AN/TPS-63B
Quantity to Sustain	53	
Unit of Measure		
Unit Expected Service Life	20	

### **Base Year:**

Annual Unitized O&S Cost by Category Base Year \$ Unit:(\$M)	System Name: Ground/Air Task Oriented Radar (G/ATOR)	Antecedent System Name: AN/TPS-63B
Unit-Level Manpower	216.1	
Unit Operations	8.5	
Maintenance	1,026.5	
Sustaining Support	340.0	
Continued System Improvements	320.0	
Other	97.7	
Total O&S	2,008.8	0.0

### **Disposal/Demilitarization Cost Estimate**

(Base Year \$Millions)	System Name: Ground/Air Task Oriented Radar (G/ATOR)	Antecedent System Name: AN/TPS-63B
Total Disposal	5.0	

### **Cost Estimate Source - Disposal**

Type:	Program Office Estimate
Approval Authority and Date:	
Note:	

The Program Lifecycle Cost Estimate (PLCCE) is dated January 2023 aligned to PB24 with fact-of-life changes.  
Disposal/Demilitarization Date of Estimate: January 2023

Disposal Cost Notes:
Additional O&S Estimate Assumptions:
Sustainment Strategy:
The sustainment strategy includes organic support with contract support for the depot level. Current Product Support Strategy employs Contractor Logistics Support (CLS) during the EMD phase to provide support for the two Engineering Development Models and up to 15 LRIP systems through Interim CLS on the Gallium Nitride and FRP contracts. During production some components may remain under CLS, others may transition to Performance Based Logistics and others may transition to traditional organic support.
Antecedent Estimate Assumptions: