



## Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-386



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

As of FY 2016 President's Budget

Defense Acquisition Management  
Information Retrieval  
(DAMIR)

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## Common Acronyms and Abbreviations for MDAP Programs

Acq O&M - Acquisition-Related Operations and Maintenance  
ACAT - Acquisition Category  
ADM - Acquisition Decision Memorandum  
APB - Acquisition Program Baseline  
APPN - Appropriation  
APUC - Average Procurement Unit Cost  
\$B - Billions of Dollars  
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  
FOC - Full Operational Capability  
FMS - Foreign Military Sales  
FRP - Full Rate Production  
FY - Fiscal Year  
FYDP - Future Years Defense Program  
ICE - Independent Cost Estimate  
IOC - Initial Operational Capability  
Inc - Increment  
JROC - Joint Requirements Oversight Council  
\$K - Thousands of Dollars  
KPP - Key Performance Parameter  
LRIP - Low Rate Initial Production  
\$M - Millions of Dollars  
MDA - Milestone Decision Authority  
MDAP - Major Defense Acquisition Program  
MILCON - Military Construction  
N/A - Not Applicable  
O&M - Operations and Maintenance  
ORD - Operational Requirements Document  
OSD - Office of the Secretary of Defense  
O&S - Operating and Support  
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  
UCR - Unit Cost Reporting  
U.S. - United States  
USD(AT&L) - Under Secretary of Defense (Acquisition, Technology and Logistics)

## Program Information

**Program Name**

Ground/Air Task Oriented Radar (G/ATOR)

**DoD Component**

Navy

## Responsible Office

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**Date**

**Assigned:** August 1, 2014

## References

**SAR Baseline (Production Estimate)**

Assistant Secretary of the Navy (Research, Development & Acquisition) (ASN(RDA)) Approved Acquisition Program Baseline (APB) dated April 14, 2014

**Approved APB**

Assistant Secretary of the Navy (Research, Development & Acquisition) (ASN(RDA)) Approved Acquisition Program Baseline (APB) dated April 14, 2014

## 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 Tactical Air Operations Module, Common Aviation Command and Control System, Composite Tracking Network, and Advanced Field Artillery Tactical Data System.

## Executive Summary

The G/ATOR program received approval of LRIP (Milestone C) on March 10, 2014. The program is fully resourced in the FY 2016 PB and supports procurement of Air Defense/Surveillance Radar (AD/SR) G/ATOR Block (GB) 1 and Ground Weapons Locating Radar GB2. The Navy is pursuing the resourcing of Expeditionary Air Surveillance Radar GB4 as part of a future budget build.

The system demonstrated compliance with all KPPs for AD/SR GB1 Radar Performance and Command and Control Integration during Developmental Testing and a Field User Evaluation. The Marine Corps Operational Test and Evaluation Activity (MCOTEA) provided a positive Operational Assessment in December 2013. MCOTEA's assessment did note challenges in reliability, but also acknowledged significant reliability growth. The G/ATOR program then went through extensive reviews and analyses to validate production readiness in order to obtain authorization to enter low rate production, which resulted with contract award in October 2014. Due to reliability concerns, the Assistant Secretary of the Navy (Research, Development and Acquisition) chartered an expert Blue Ribbon Panel that identified in its final report the G/ATOR hardware is extremely stable and robust. The program office will continue working to improve software reliability to ensure the system will support operational mission needs. The system reliability growth goals will be based on a sound reliability, availability, maintainability, and cost rationale and will support operational mission needs prior to fielding in FY 2017.

## Threshold Breaches

### APB Breaches

<b>Schedule</b>		<input type="checkbox"/>
<b>Performance</b>		<input type="checkbox"/>
<b>Cost</b>	RDT&E	<input type="checkbox"/>
	Procurement	<input type="checkbox"/>
	MILCON	<input type="checkbox"/>
	Acq O&M	<input type="checkbox"/>
<b>O&amp;S Cost</b>		<input type="checkbox"/>
<b>Unit Cost</b>	PAUC	<input type="checkbox"/>
	APUC	<input type="checkbox"/>

### Nunn-McCurdy Breaches

#### Current UCR Baseline

PAUC	None
APUC	None

#### Original UCR Baseline

PAUC	None
APUC	None

### Schedule



Schedule Events				
Events	SAR Baseline Production Estimate	Current APB Production Objective/Threshold	Current Estimate	Current Estimate
G/ATOR				
Milestone B	Aug 2005	Aug 2005	Aug 2005	Aug 2005
Milestone C	Mar 2014	Mar 2014	Mar 2014	Mar 2014
Initial Operational Test & Evaluation	Oct 2018	Oct 2018	Oct 2019	Oct 2018
FRP Decision	Mar 2019	Mar 2019	Mar 2020	Mar 2019
AD/SR (GB1)				
Operational Assessment	Aug 2016	Aug 2016	Aug 2017	Aug 2016
IOC	Feb 2017	Feb 2017	Feb 2018	Feb 2017
GWLR (GB2)				
Operational Assessment	Oct 2017	Oct 2017	Oct 2018	Oct 2017
IOC	Feb 2018	Feb 2018	Feb 2019	Feb 2018

**Change Explanations**

None

**Acronyms and Abbreviations**

AD/SR - Air Defense/Surveillance Radar

GB1/2 - Ground/Air Task Oriented Radar Block 1/2

GWLR - Ground Weapons Locating Radar

## Performance

Performance Characteristics				
SAR Baseline Production Estimate	Current APB Production Objective/Threshold	Demonstrated Performance	Current Estimate	
<b>AD/SR (GB1)</b>				
<b>Tier 1: Net-Centric Tier 2: Information Transport, Information Assurance</b>				
<b>Enter and be managed in the network</b>				
<b>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	30 min Reconfigure from transport to full operation 30 min	60 min Reconfigure from transport to full operation 60 min	TBD	30 min Reconfigure from transport to full operation 30 min
<b>Exchange information</b>				
<b>Information Element: Air Track Data Measure: Dissemination of target biographic and physical data Measure: Receipt of HVT data Measure: Latency of data Measure: Strenght of encryption Conditions: Tactical/Geopolitical</b>				
Non Permissive	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	TBD	Non Permissive
<b>Tier 1: Battlespace Awareness Tier 2: Intelligence, Surveillance &amp; Reconnaissance, Environment</b>				
<b>Combat Identification (Block 1) (Applicable to Block 4)</b>				
(Threshold=Objective) AD/SR's IFF system shall be compatible with MK XII IFF systems (Modes 1, 2, 3/A, C, 4).	(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).	TBD	(Threshold= Objective) AD/SR's IFF system shall be compatible with MK XII IFF systems (Modes 1, 2, 3/A, C, 4).
<b>Combat Identification (Block 1) (Applicable to Block 4)</b>				

Integrate IFF Mode 5 (Level 3) and Mode S (Level 3)	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)	TBD	Integrate IFF Mode 5 (Level 3) and Mode S (Level 3)
<b>Tier 1: Logistics Tier 2: Operational Contract Support</b>				
<b>Sustainment</b>				
<b>Material 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 0.90 (Objective)	Materiel Availability The AD/SR shall have a Materiel Availability of 0.85 (Threshold)	TBD	Materiel Availability The AD/SR shall have a Materiel Availability of 0.90 (Objective)
<b>Operational availability</b>				
Operational availability The AD/SR shall have an Ao of 0.95 (Objective)	Operational availability The AD/SR shall have an Ao of 0.95 (Objective)	Operational availability The AD/SR shall have an Ao of 0.90 (Threshold)	TBD	Operational availability The AD/SR shall have an Ao of 0.95 (Objective)
<b>GWLR (GB2)</b>				
<b>Detection, Tracking and Classification (all ranges in (km))</b>				
(Mortar (Light .5-30) (Medium .5-40) (Heavy .5-40)) (Artillery (Light 3-60) (Medium 3-60) (Heavy 3-60)) (Rockets (Light 6-60) (Medium 6-60) (Heavy 15-90))	(Mortar (Light .5-30) (Medium .5-40) (Heavy .5-40)) (Artillery (Light 3-60) (Medium 3-60) (Heavy 3-60)) (Rockets (Light 6-60) (Medium 6-60) (Heavy 15-90))	(Mortar (Light .75-20) (Medium .75-30) (Heavy .75-30)) (Artillery (Light 3-30) (Medium 3-40) (Heavy 3-40)) (Rockets (Light 10-40) (Medium 10-50) (Heavy 10-60))	TBD	(Mortar (Light .75-20) (Medium .75-30) (Heavy .75-30)) (Artillery (Light 3-30) (Medium 3-40) (Heavy 3-40)) (Rockets (Light 10-40) (Medium 10-50) (Heavy 10-60))
<b>Probability of location (acquisition)</b>				
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.	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.	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.	TBD	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.
<b>Hostile Weapon Location (range in (m))</b>				
The CEP50 of weapon	The CEP50 of weapon	The CEP50 of	TBD	The CEP50 of

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.	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.	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.		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>Projectile Impact (CEP50)</b>				
The CEP50 of weapon location shall be less than the greater of 30m or 0.252% of range (in meters) 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 (in meters) 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 (in meters) for at least 80% (objective) of the cases in the shot array in the defined nominal environment.	TBD	The CEP50 of weapon location shall be less than the greater of 30m or 0.252% of range (in meters) for at least 80% (objective) of the cases in the shot array in the defined nominal environment.
<b>Transportability</b>				
(Objective=Threshold) C-130 drive-on, drive-off	(Objective=Threshold) C-130 drive-on, drive-off	C-130 drive-on, drive-off	TBD	C-130 drive-on, drive-off
<b>Net Ready</b>				
100% of interfaces certified; services; policy-enforcement controls; and data correctness, availability and processing requirements in the Joint integrated architecture.	100% of interfaces certified; services; policy-enforcement controls; and data correctness, availability and processing requirements in the Joint integrated architecture.	100% of interfaces certified; services; policy-enforcement controls; and data correctness, availability and processing requirements designated as enterprise-level or critical in the Joint integrated architecture.	TBD	100 percent of interfaces certified; services; policy enforcement controls; and data correctness, availability and processing requirements designated as enterprise level or critical in the Joint integrated architecture.

Classified Performance information is provided in the classified annex to this submission.

### Requirements Reference

Capability Production Document (CPD) (GB1) dated December 3, 2012 and Operational Requirements Document (ORD) (GB2) dated July 20, 2004

**Change Explanations**

None

**Acronyms and Abbreviations**

AD/SR - Air Defense/Surveillance Radar  
CAC2S - Common Aviation Command and Control System  
CEP50 - Circular Error Probable 50  
CTN - Composite Tracking Network  
EPLRS - Enhanced Position Location Reporting System  
GB1/2/4 - Ground/Air Task Oriented Radar Block 1/2/4  
GWLR - Ground Weapons Locating Radar  
HVT - High Value Target  
IFF - Identification Friend or Foe  
kbps - kilobits per second  
km - Kilometers  
m - meters  
mils - milliradians  
min - minutes  
nm - nautical mile  
NRT - Near Real Time  
TAOM - Tactical Air Operations Modules  
TFOCA - Tactical Fiber Optic Cable Assembly

## Track to Budget

## RDT&amp;E

Appn	BA	PE	
Navy	1319	07	0204460M
	<b>Project</b>	<b>Name</b>	
	9C89	Marine Ground-Air Radar	
	<b>Notes:</b>	Sub activity changed to C9C890 from C9C89B FY2013 when G/ATOR PE was created and no longer shared.	
Navy	1319	04	0206313M
	<b>Project</b>	<b>Name</b>	
	3099D	Radar Systems (Shared) (Sunk)	
	<b>Notes:</b>	Added based on historical data. This line started its use with G/ATOR in 2004.	
Navy	1319	07	0206313M
	<b>Project</b>	<b>Name</b>	
	9C89	G/ATOR (Shared) (Sunk)	
	<b>Notes:</b>	Ground/Air Task Oriented Radar (G/ATOR)	

## Procurement

Appn	BA	PE	
Navy	1109	04	0204460M
	<b>Line Item</b>	<b>Name</b>	
	4650	Radar Systems (Shared) (Sunk)	
	<b>Notes:</b>	Radar Systems FY2013 and FY2014	
Navy	1109	04	0206313M
	<b>Line Item</b>	<b>Name</b>	
	4650	Radar Systems (Shared)	
	<b>Notes:</b>	Radar Systems	
Navy	1109	04	0506313M
	<b>Line Item</b>	<b>Name</b>	
	4655	G/ATOR	
	<b>Notes:</b>	G/ATOR Reserves	
Navy	1109	04	0204460M
	<b>Line Item</b>	<b>Name</b>	
	4655	G/ATOR	
	<b>Notes:</b>	G/ATOR FY2015	
Navy	1109	07	0204460M
	<b>Line Item</b>	<b>Name</b>	
	7000	Spares and Repairs Parts (Shared)	

**Notes:** Spares and Repairs Parts

**MILCON**

**Notes**

The MILCON funding line has not yet been established.

## Cost and Funding

### Cost Summary

Total Acquisition Cost							
Appropriation	BY 2012 \$M			BY 2012 \$M	TY \$M		
	SAR Baseline Production Estimate	Current APB Production Objective/Threshold		Current Estimate	SAR Baseline Production Estimate	Current APB Production Objective	Current Estimate
RDT&E	986.5	986.5	1085.2	988.0	1019.2	1019.2	1017.1
Procurement	1625.3	1625.3	1787.8	1623.5	1894.8	1894.8	1894.4
Flyaway	--	--	--	1513.9	--	--	1766.3
Recurring	--	--	--	1509.8	--	--	1762.1
Non Recurring	--	--	--	4.1	--	--	4.2
Support	--	--	--	109.6	--	--	128.1
Other Support	--	--	--	15.6	--	--	18.9
Initial Spares	--	--	--	94.0	--	--	109.2
MILCON	3.5	3.5	3.9	3.5	3.9	3.9	3.9
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	2615.3	2615.3	N/A	2615.0	2917.9	2917.9	2915.4

#### Confidence Level

Confidence Level of cost estimate for current APB: 50%

The Independent Cost Estimate (ICE) to support the G/ATOR program to establish a new Acquisition Program Baseline (APB); like all life-cycle cost estimates previously performed by the Naval Center for Cost Analysis (NCCA) is built upon a product-oriented work breakdown structure, based on historical actual cost information to the maximum extent possible, and, most importantly, based on conservative assumptions that are consistent with actual demonstrated contractor and government performance for a series of acquisition programs in which the Department has been successful.

Total Quantity			
Quantity	SAR Baseline Production Estimate	Current APB Production	Current Estimate
RDT&E		0	0
Procurement		45	45
Total		45	45

## Cost and Funding

### Funding Summary

Appropriation Summary									
FY 2016 President's Budget / December 2014 SAR (TY\$ M)									
Appropriation	Prior	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	To Complete	Total
RDT&E	660.1	99.1	80.2	84.4	36.1	10.2	6.2	40.8	1017.1
Procurement	184.2	91.8	130.7	141.0	145.9	234.7	224.6	741.5	1894.4
MILCON	0.0	0.0	3.9	0.0	0.0	0.0	0.0	0.0	3.9
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2016 Total	844.3	190.9	214.8	225.4	182.0	244.9	230.8	782.3	2915.4
PB 2015 Total	858.4	197.8	190.2	240.1	220.4	245.6	310.2	655.2	2917.9
Delta	-14.1	-6.9	24.6	-14.7	-38.4	-0.7	-79.4	127.1	-2.5

Quantity Summary										
FY 2016 President's Budget / December 2014 SAR (TY\$ M)										
Quantity	Undistributed	Prior	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	To Complete	Total
Development	0	0	0	0	0	0	0	0	0	0
Production	0	4	2	3	3	3	6	6	18	45
PB 2016 Total	0	4	2	3	3	3	6	6	18	45
PB 2015 Total	0	4	2	2	3	4	6	8	16	45
Delta	0	0	0	1	0	-1	0	-2	2	0

## Cost and Funding

### Annual Funding By Appropriation

Annual Funding							
1319   RDT&E   Research, Development, Test, and Evaluation, Navy							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2004	--	--	--	--	--	--	6.7
2005	--	--	--	--	--	--	8.9
2006	--	--	--	--	--	--	13.5
2007	--	--	--	--	--	--	37.2
2008	--	--	--	--	--	--	88.9
2009	--	--	--	--	--	--	127.3
2010	--	--	--	--	--	--	67.2
2011	--	--	--	--	--	--	63.2
2012	--	--	--	--	--	--	102.5
2013	--	--	--	--	--	--	70.3
2014	--	--	--	--	--	--	74.4
2015	--	--	--	--	--	--	99.1
2016	--	--	--	--	--	--	80.2
2017	--	--	--	--	--	--	84.4
2018	--	--	--	--	--	--	36.1
2019	--	--	--	--	--	--	10.2
2020	--	--	--	--	--	--	6.2
2021	--	--	--	--	--	--	--
2022	--	--	--	--	--	--	3.2
2023	--	--	--	--	--	--	--
2024	--	--	--	--	--	--	3.3
2025	--	--	--	--	--	--	--
2026	--	--	--	--	--	--	3.4
2027	--	--	--	--	--	--	--
2028	--	--	--	--	--	--	3.5
2029	--	--	--	--	--	--	--
2030	--	--	--	--	--	--	3.6
2031	--	--	--	--	--	--	--
2032	--	--	--	--	--	--	3.7
2033	--	--	--	--	--	--	--
2034	--	--	--	--	--	--	3.8
2035	--	--	--	--	--	--	--
2036	--	--	--	--	--	--	3.9
2037	--	--	--	--	--	--	--
2038	--	--	--	--	--	--	4.1

2039	--	--	--	--	--	--	--	--
2040	--	--	--	--	--	--	--	4.2
2041	--	--	--	--	--	--	--	--
2042	--	--	--	--	--	--	--	4.1
Subtotal	--	--	--	--	--	--	--	1017.1

Annual Funding 1319   RDT&E   Research, Development, Test, and Evaluation, Navy							
Fiscal Year	Quantity	BY 2012 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2004	--	--	--	--	--	--	7.8
2005	--	--	--	--	--	--	10.1
2006	--	--	--	--	--	--	14.8
2007	--	--	--	--	--	--	39.8
2008	--	--	--	--	--	--	93.5
2009	--	--	--	--	--	--	132.1
2010	--	--	--	--	--	--	68.7
2011	--	--	--	--	--	--	63.1
2012	--	--	--	--	--	--	100.6
2013	--	--	--	--	--	--	68.0
2014	--	--	--	--	--	--	71.2
2015	--	--	--	--	--	--	93.4
2016	--	--	--	--	--	--	74.3
2017	--	--	--	--	--	--	76.7
2018	--	--	--	--	--	--	32.2
2019	--	--	--	--	--	--	8.9
2020	--	--	--	--	--	--	5.3
2021	--	--	--	--	--	--	--
2022	--	--	--	--	--	--	2.6
2023	--	--	--	--	--	--	--
2024	--	--	--	--	--	--	2.6
2025	--	--	--	--	--	--	--
2026	--	--	--	--	--	--	2.6
2027	--	--	--	--	--	--	--
2028	--	--	--	--	--	--	2.6
2029	--	--	--	--	--	--	--
2030	--	--	--	--	--	--	2.5
2031	--	--	--	--	--	--	--
2032	--	--	--	--	--	--	2.5
2033	--	--	--	--	--	--	--
2034	--	--	--	--	--	--	2.5
2035	--	--	--	--	--	--	--
2036	--	--	--	--	--	--	2.4
2037	--	--	--	--	--	--	--
2038	--	--	--	--	--	--	2.5
2039	--	--	--	--	--	--	--
2040	--	--	--	--	--	--	2.4
2041	--	--	--	--	--	--	--
2042	--	--	--	--	--	--	2.3
Subtotal	--	--	--	--	--	--	988.0

Annual Funding 1109   Procurement   Procurement, Marine Corps							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2012	--	--	--	4.2	4.2	--	4.2
2013	2	86.3	--	--	86.3	--	86.3
2014	2	86.3	--	--	86.3	7.4	93.7
2015	2	89.2	--	--	89.2	2.6	91.8
2016	3	129.3	1.4	--	130.7	--	130.7
2017	3	121.7	0.9	--	122.6	18.4	141.0
2018	3	121.9	1.2	--	123.1	22.8	145.9
2019	6	220.1	0.9	--	221.0	13.7	234.7
2020	6	209.2	1.7	--	210.9	13.7	224.6
2021	9	321.4	3.4	--	324.8	19.4	344.2
2022	9	295.3	2.3	--	297.6	18.7	316.3
2023	--	--	2.2	--	2.2	1.2	3.4
2024	--	--	--	--	--	10.2	10.2
2025	--	--	--	--	--	--	--
2026	--	--	--	--	--	--	--
2027	--	9.8	--	--	9.8	--	9.8
2028	--	--	--	--	--	--	--
2029	--	--	--	--	--	--	--
2030	--	10.3	--	--	10.3	--	10.3
2031	--	--	--	--	--	--	--
2032	--	--	--	--	--	--	--
2033	--	10.9	--	--	10.9	--	10.9
2034	--	--	--	--	--	--	--
2035	--	--	--	--	--	--	--
2036	--	11.5	--	--	11.5	--	11.5
2037	--	--	--	--	--	--	--
2038	--	--	--	--	--	--	--
2039	--	12.1	--	--	12.1	--	12.1
2040	--	--	--	--	--	--	--
2041	--	--	--	--	--	--	--
2042	--	12.8	--	--	12.8	--	12.8
Subtotal	45	1748.1	14.0	4.2	1766.3	128.1	1894.4

Annual Funding 1109   Procurement   Procurement, Marine Corps							
Fiscal Year	Quantity	BY 2012 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2012	--	--	--	4.1	4.1	--	4.1
2013	2	83.0	--	--	83.0	--	83.0
2014	2	81.7	--	--	81.7	7.0	88.7
2015	2	83.1	--	--	83.1	2.4	85.5
2016	3	118.2	1.3	--	119.5	--	119.5
2017	3	109.2	0.8	--	110.0	16.5	126.5
2018	3	107.2	1.1	--	108.3	20.0	128.3
2019	6	189.8	0.8	--	190.6	11.8	202.4
2020	6	176.9	1.4	--	178.3	11.6	189.9
2021	9	266.4	2.8	--	269.2	16.1	285.3
2022	9	240.0	1.9	--	241.9	15.2	257.1
2023	--	--	1.7	--	1.7	1.0	2.7
2024	--	--	--	--	--	8.0	8.0
2025	--	--	--	--	--	--	--
2026	--	--	--	--	--	--	--
2027	--	7.2	--	--	7.2	--	7.2
2028	--	--	--	--	--	--	--
2029	--	--	--	--	--	--	--
2030	--	7.1	--	--	7.1	--	7.1
2031	--	--	--	--	--	--	--
2032	--	--	--	--	--	--	--
2033	--	7.1	--	--	7.1	--	7.1
2034	--	--	--	--	--	--	--
2035	--	--	--	--	--	--	--
2036	--	7.1	--	--	7.1	--	7.1
2037	--	--	--	--	--	--	--
2038	--	--	--	--	--	--	--
2039	--	7.0	--	--	7.0	--	7.0
2040	--	--	--	--	--	--	--
2041	--	--	--	--	--	--	--
2042	--	7.0	--	--	7.0	--	7.0
Subtotal	45	1498.0	11.8	4.1	1513.9	109.6	1623.5

Cost Quantity Information		
1109   Procurement   Procurement, Marine Corps		
Fiscal Year	Quantity	End Item Recurring Flyaway (Aligned With Quantity) BY 2012 \$M
2012	--	--
2013	2	78.1
2014	2	85.6
2015	2	87.0
2016	3	123.2
2017	3	113.9
2018	3	111.8
2019	6	196.9
2020	6	183.3
2021	9	272.6
2022	9	245.6
2023	--	--
2024	--	--
2025	--	--
2026	--	--
2027	--	--
2028	--	--
2029	--	--
2030	--	--
2031	--	--
2032	--	--
2033	--	--
2034	--	--
2035	--	--
2036	--	--
2037	--	--
2038	--	--
2039	--	--
2040	--	--
2041	--	--
2042	--	--
Subtotal	45	1498.0

Annual Funding 1205   MILCON   Military Construction, Navy and Marine Corps	
Fiscal Year	TY \$M
	Total Program
2016	3.9
Subtotal	3.9

Annual Funding 1205   MILCON   Military Construction, Navy and Marine Corps	
Fiscal Year	BY 2012 \$M
	Total Program
2016	3.5
Subtotal	3.5

## Low Rate Initial Production

Item	Initial LRIP Decision	Current Total LRIP
Approval Date	3/10/2014	3/10/2014
Approved Quantity	4	4
Reference	MS C ADM	MS C ADM
Start Year	2014	2016
End Year	2014	2016

## **Foreign Military Sales**

None

## **Nuclear Costs**

None

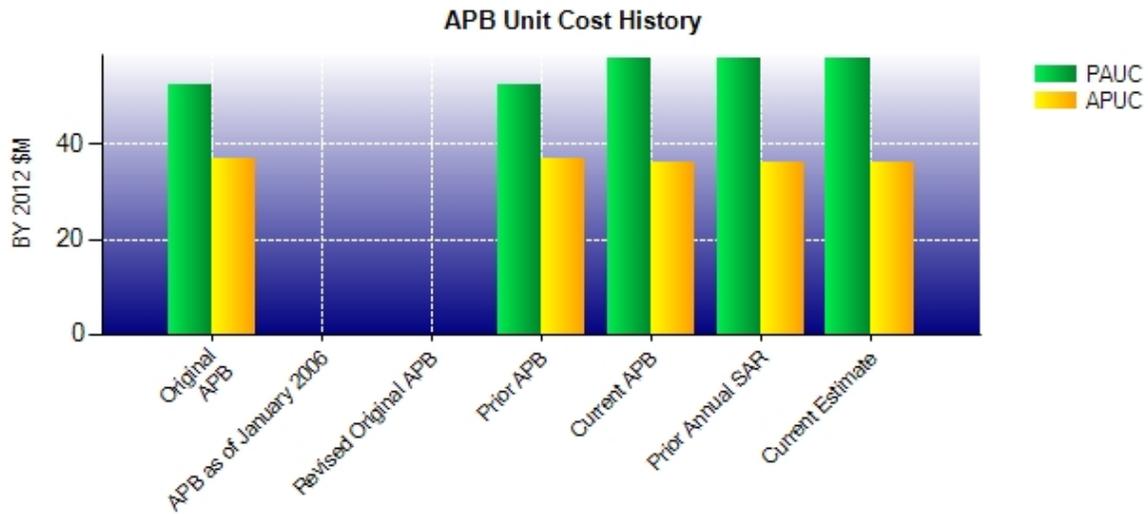
## Unit Cost

### Unit Cost Report

Item	BY 2012 \$M	BY 2012 \$M	% Change
	Current UCR Baseline (Apr 2014 APB)	Current Estimate (Dec 2014 SAR)	
<b>Program Acquisition Unit Cost</b>			
Cost	2615.3	2615.0	
Quantity	45	45	
Item	58.118	58.111	-0.01
<b>Average Procurement Unit Cost</b>			
Cost	1625.3	1623.5	
Quantity	45	45	
Unit Cost	36.118	36.078	-0.11

Item	BY 2012 \$M	BY 2012 \$M	% Change
	Original UCR Baseline (May 2012 APB)	Current Estimate (Dec 2014 SAR)	
<b>Program Acquisition Unit Cost</b>			
Cost	2987.3	2615.0	
Quantity	57	45	
Unit Cost	52.409	58.111	+10.88
<b>Average Procurement Unit Cost</b>			
Cost	2103.1	1623.5	
Quantity	57	45	
Unit Cost	36.896	36.078	-2.22

### Unit Cost History



Item	Date	BY 2012 \$M		TY \$M	
		PAUC	APUC	PAUC	APUC
Original APB	May 2012	52.409	36.896	58.349	42.665
APB as of January 2006	N/A	N/A	N/A	N/A	N/A
Revised Original APB	N/A	N/A	N/A	N/A	N/A
Prior APB	May 2012	52.409	36.896	58.349	42.665
Current APB	Apr 2014	58.118	36.118	64.842	42.107
Prior Annual SAR	Dec 2013	58.118	36.118	64.842	42.107
Current Estimate	Dec 2014	58.111	36.078	64.787	42.098

### SAR Unit Cost History

Initial SAR Baseline to Current SAR Baseline (TY \$M)									
Initial PAUC Development Estimate	Changes								PAUC Production Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
58.349	0.367	5.249	0.813	0.000	1.451	0.000	-1.387	6.493	64.842

Current SAR Baseline to Current Estimate (TY \$M)									
PAUC Production Estimate	Changes								PAUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
64.842	-0.442	0.000	-0.024	0.000	0.060	0.000	0.351	-0.055	64.787

Initial SAR Baseline to Current SAR Baseline (TY \$M)									
Initial APUC Development Estimate	Changes								APUC Production Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
42.665	0.276	1.067	0.813	0.000	-1.327	0.000	-1.387	-0.558	42.107

Current SAR Baseline to Current Estimate (TY \$M)									
APUC Production Estimate	Changes								APUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
42.107	-0.327	0.000	-0.024	0.000	0.111	0.000	0.231	-0.009	42.098

SAR Baseline History				
Item	SAR Planning Estimate	SAR Development Estimate	SAR Production Estimate	Current Estimate
Milestone A	N/A	N/A	N/A	N/A
Milestone B	N/A	Aug 2005	Aug 2005	Aug 2005
Milestone C	N/A	Jul 2013	Mar 2014	Mar 2014
IOC	N/A	Aug 2016	Feb 2017	Feb 2017
Total Cost (TY \$M)	N/A	3325.9	2917.9	2915.4
Total Quantity	N/A	57	45	45
PAUC	N/A	58.349	64.842	64.787

## Cost Variance

Summary TY \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Production Estimate)	1019.2	1894.8	3.9	2917.9
Previous Changes				
Economic	+13.3	+18.7	--	+32.0
Quantity	--	--	--	--
Schedule	--	-1.9	--	-1.9
Engineering	--	--	--	--
Estimating	-312.3	-16.0	--	-328.3
Other	--	--	--	--
Support	+299.0	-0.7	--	+298.3
Subtotal	--	+0.1	--	+0.1
Current Changes				
Economic	-18.4	-33.4	-0.1	-51.9
Quantity	--	--	--	--
Schedule	--	+0.8	--	+0.8
Engineering	--	--	--	--
Estimating	+309.9	+21.0	+0.1	+331.0
Other	--	--	--	--
Support	-293.6	+11.1	--	-282.5
Subtotal	-2.1	-0.5	--	-2.6
Adjustments	--	--	--	--
Total Changes	-2.1	-0.4	--	-2.5
CE - Cost Variance	1017.1	1894.4	3.9	2915.4
CE - Cost & Funding	1017.1	1894.4	3.9	2915.4

Summary BY 2012 \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Production Estimate)	986.5	1625.3	3.5	2615.3
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-308.2	-27.5	--	-335.7
Other	--	--	--	--
Support	+294.8	-0.8	--	+294.0
Subtotal	-13.4	-28.3	--	-41.7
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	-0.1	-0.1
Engineering	--	--	--	--
Estimating	+309.7	+17.4	+0.1	+327.2
Other	--	--	--	--
Support	-294.8	+9.1	--	-285.7
Subtotal	+14.9	+26.5	--	+41.4
Adjustments	--	--	--	--
Total Changes	+1.5	-1.8	--	-0.3
CE - Cost Variance	988.0	1623.5	3.5	2615.0
CE - Cost & Funding	988.0	1623.5	3.5	2615.0

Previous Estimate: June 2014

RDT&E	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-18.4
Adjustment for current and prior escalation. (Estimating)	+257.2	+9.2
Change associated with the refinement of System Engineering and Program Management estimating methodology. (Estimating)	+4.7	+5.2
Adjusted Prior Years (FY 2004 - FY 2012) to reconcile to actual expenditures. (Estimating)	0.0	+224.5
Increase in Engineering Change Order/Engineering Change Proposal (ECO/ECP) costs as a function of Hardware procurement and rephasing of funding. (Estimating)	+4.3	+6.2
Revised estimate due to later block development and subsequent rephasing of funding. (Estimating)	+43.5	+64.8
Adjustment for current and prior escalation. (Support)	-243.6	+4.4
Revised estimate resulting in a decrease in support associated with necessary for technology insertion. (Support)	-51.2	-298.0
<b>RDT&amp;E Subtotal</b>	<b>+14.9</b>	<b>-2.1</b>

Procurement	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-33.4
Stretch-out of procurement buy profile. (Schedule)	0.0	+0.8
Adjustment for current and prior escalation. (Estimating)	+5.8	+6.2
Revised Engineering Change Order/Engineering Change Proposal (ECO/ECP) costs as a function of Hardware procurement in out years. (Estimating)	-0.8	-1.2
Adjusted Prior Years (FY 2013 to FY 2014) to reconcile to actual expenditures. (Estimating)	+0.8	+0.7
Increase in Initial Spares due to procurement of rephasing of profile. (Support) (Estimating)	+2.2	+2.4
Revised estimate to associate End Item Related Engineering Change Order/Engineering Change Proposal (ECO/ECP) costs and rephasing of funding. (Estimating)	+31.7	+36.4
Decreased cost associated with accelerated procurement of asset earlier in procurement schedule. (Estimating)	-27.7	-30.4
Revised estimate for production-related program management. (Estimating)	+5.4	+6.9
Adjustment for current and prior escalation. (Support)	+0.3	+0.3
Decrease in Other Support. Revised estimate for support necessary for technology insertion (Support)	-0.6	-1.0
Increase in Initial Spares. Revised estimate to account for spares alignment to be end item related and negotiated spare actuals. (Support)	+9.4	+11.8
<b>Procurement Subtotal</b>	<b>+26.5</b>	<b>-0.5</b>

MILCON	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-0.1
Unfunded MILCON in FY 2015 moved to following year to align with expected need date. (Schedule)	-0.1	0.0
Adjustment for current and prior escalation. (Estimating)	+0.1	+0.1

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MILCON Subtotal	0.0	0.0
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## Contracts

### Contract Identification

**Appropriation:** RDT&E  
**Contract Name:** LRIP GaAs  
**Contractor:** Northrop Grumman Corporation  
**Contractor Location:** 1580 West Nursery Road  
 Linthicum Heights, MD 21090  
**Contract Number:** M67854-07-C-2072/4  
**Contract Type:** Fixed Price Incentive(Firm Target) (FPIF), Firm Fixed Price (FFP), Cost Plus Incentive Fee (CPIF)  
**Award Date:** October 23, 2014  
**Definitization Date:** October 23, 2014

### Contract Price

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
0.0	207.3	4	0.0	207.3	4	200.2	200.2

### Contract Variance

Item	Cost Variance	Schedule Variance
Cumulative Variances To Date	0.0	0.0
Previous Cumulative Variances	--	--
Net Change	+0.0	+0.0

### Cost and Schedule Variance Explanations

None

### General Contract Variance Explanation

Cost and schedule variances are not reported for this contract, because EVM reporting is just beginning and data is not yet available.

### Notes

This is the first time this contract is being reported.

## Deliveries and Expenditures

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	0	0	0	--
Production	45	0	45	0.00%
Total Program Quantity Delivered	45	0	45	0.00%

Expended and Appropriated (TY \$M)			
Total Acquisition Cost	2915.4	Years Appropriated	12
Expended to Date	627.4	Percent Years Appropriated	30.77%
Percent Expended	21.52%	Appropriated to Date	1035.2
Total Funding Years	39	Percent Appropriated	35.51%

The above data is current as of February 06, 2015.

## Operating and Support Cost

### Cost Estimate Details

<b>Date of Estimate:</b>	January 14, 2014
<b>Source of Estimate:</b>	SCP
<b>Quantity to Sustain:</b>	45
<b>Unit of Measure:</b>	System
<b>Service Life per Unit:</b>	20.00 Years
<b>Fiscal Years in Service:</b>	FY 2016 - FY 2044

A system consists of the Radar Equipment Group, the Communications Equipment Group and the Power Equipment Group.

### 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 (EDMs) and up to eight LRIP systems. Interim CLS will be provided as part of the FRP contract. During production some components may remain under CLS, others may transition to Performance Based Logistics and others may transition to traditional organic support.

### Antecedent Information

The AN/TPS-63B Radar is the antecedent system. There is no data in the Naval Visibility and Management of Operating and Support Costs database for the antecedent system.

The program office, working with the Department of the Navy Headquarters and OSD staff, will continue to explore alternative cost data sources of antecedent systems to supply this information.

Cost Element	Annual O&S Costs BY2012 \$M	
	G/ATOR Average Annual Cost Per System	AN/TPS-63B Radar (Antecedent) Average Annual Cost Per System
Unit-Level Manpower	0.255	0.000
Unit Operations	0.016	0.000
Maintenance	1.300	0.000
Sustaining Support	0.545	0.000
Continuing System Improvements	0.682	0.000
Indirect Support	0.001	0.000
Other	0.000	0.000
Total	2.799	--

Item	Total O&S Cost \$M			
	G/ATOR			AN/TPS-63B Radar (Antecedent)
	Current Production APB Objective/Threshold		Current Estimate	
<b>Base Year</b>	2522.6	2774.9	2519.4	N/A
<b>Then Year</b>	3326.3	N/A	3321.3	N/A

Disposal Cost is included in the Operating and Support Cost of the current APB objective and threshold for this program.

#### Equation to Translate Annual Cost to Total Cost

Total O&S cost = Average Annual Cost Per System \* # of systems \* Service Life = \$2.79M \* 45 \* 20 = \$2519M

O&S Cost Variance		
Category	BY 2012 \$M	Change Explanations
Prior SAR Total O&S Estimates - Jun 2014 SAR	2519.4	
Programmatic/Planning Factors	0.0	
Cost Estimating Methodology	0.0	
Cost Data Update	0.0	
Labor Rate	0.0	
Energy Rate	0.0	
Technical Input	0.0	
Other	0.0	
<b>Total Changes</b>	<b>0.0</b>	
Current Estimate	2519.4	

#### Disposal Estimate Details

**Date of Estimate:** January 14, 2014  
**Source of Estimate:** SCP  
**Disposal/Demilitarization Total Cost (BY 2012 \$M):** Total costs for disposal of all System are 2.9

TY Total disposal cost are \$5.0M.