



Selected Acquisition Report (SAR)

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



Ground/Air Task Oriented Radar (G/ATOR)

As of FY 2015 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

Report Documentation Page

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Common Acronyms and Abbreviations

Acq O&M - Acquisition-Related Operations and Maintenance
APB - Acquisition Program Baseline
APPN - Appropriation
APUC - Average Procurement Unit Cost
BA - Budget Authority/Budget Activity
BY - Base Year
DAMIR - Defense Acquisition Management Information Retrieval
Dev Est - Development Estimate
DoD - Department of Defense
DSN - Defense Switched Network
Econ - Economic
Eng - Engineering
Est - Estimating
FMS - Foreign Military Sales
FY - Fiscal Year
IOC - Initial Operational Capability
\$K - Thousands of Dollars
LRIP - Low Rate Initial Production
\$M - Millions of Dollars
MILCON - Military Construction
N/A - Not Applicable
O&S - Operating and Support
Oth - Other
PAUC - Program Acquisition Unit Cost
PB - President's Budget
PE - Program Element
Proc - Procurement
Prod Est - Production Estimate
QR - Quantity Related
Qty - Quantity
RDT&E - Research, Development, Test, and Evaluation
SAR - Selected Acquisition Report
Sch - Schedule
Spt - Support
TBD - To Be Determined
TY - Then Year
UCR - Unit Cost Reporting

Program Information

Program Name

Ground/Air Task Oriented Radar (G/ATOR)

DoD Component

Navy

Responsible Office

Responsible Office

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Date Assigned July 7, 2009

References

SAR Baseline (Development Estimate)

Navy Acquisition Executive (NAE) Approved Acquisition Program Baseline (APB) dated May 22, 2012

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 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. G/ATOR Block 3 (GB3) is not currently defined or resourced. Once GB3 capabilities are defined resourcing will be included in future budget builds.

Executive Summary

G/ATOR is the Marine Corps next generation Air Surveillance/Air Defense and Air Traffic Control Radar. It will replace five legacy Marine Corps radars with state of the art capability and mission effectiveness for the foreseeable future.

The Assistant Secretary of the Navy, Research, Development and Acquisition approved the LIRP Justification and Approval on July 25, 2012. Vice Chairman Joint Chiefs of Staff signed the Joint Requirements Oversight Council Memorandum 188-12 of December 3, 2012 endorsing the Air Defense/Surveillance (AD/SR) Radar G/ATOR Block 1 (GB1) Capability Production Document.

Milestone C was completed January 2014. The Engineering and Manufacturing Development phase of the program is fully resourced in the FY 2015 PB which also supports procurement of AD/SR GB1 and Ground Weapons Locating Radar G/ATOR Block 2. The Navy is pursuing the resourcing of Expeditionary Air Surveillance Radar G/ATOR Block 4 as part of a future budget build.

The system demonstrated compliance with all Key Performance Parameters 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 provided a positive Operational Assessment in December 2013. MCOTEA's assessment did note challenges in reliability, but also acknowledged significant reliability growth over this period. The program office will continue working to develop a viable reliability growth effort designed to improve, and verify, that the system reliability will support operational mission needs. The system reliability growth goals will be based on a sound reliability, availability, maintainability, and cost rationale. The reliability growth plan goals will be defined to support operational mission needs prior to fielding in FY 2017.

Threshold Breaches

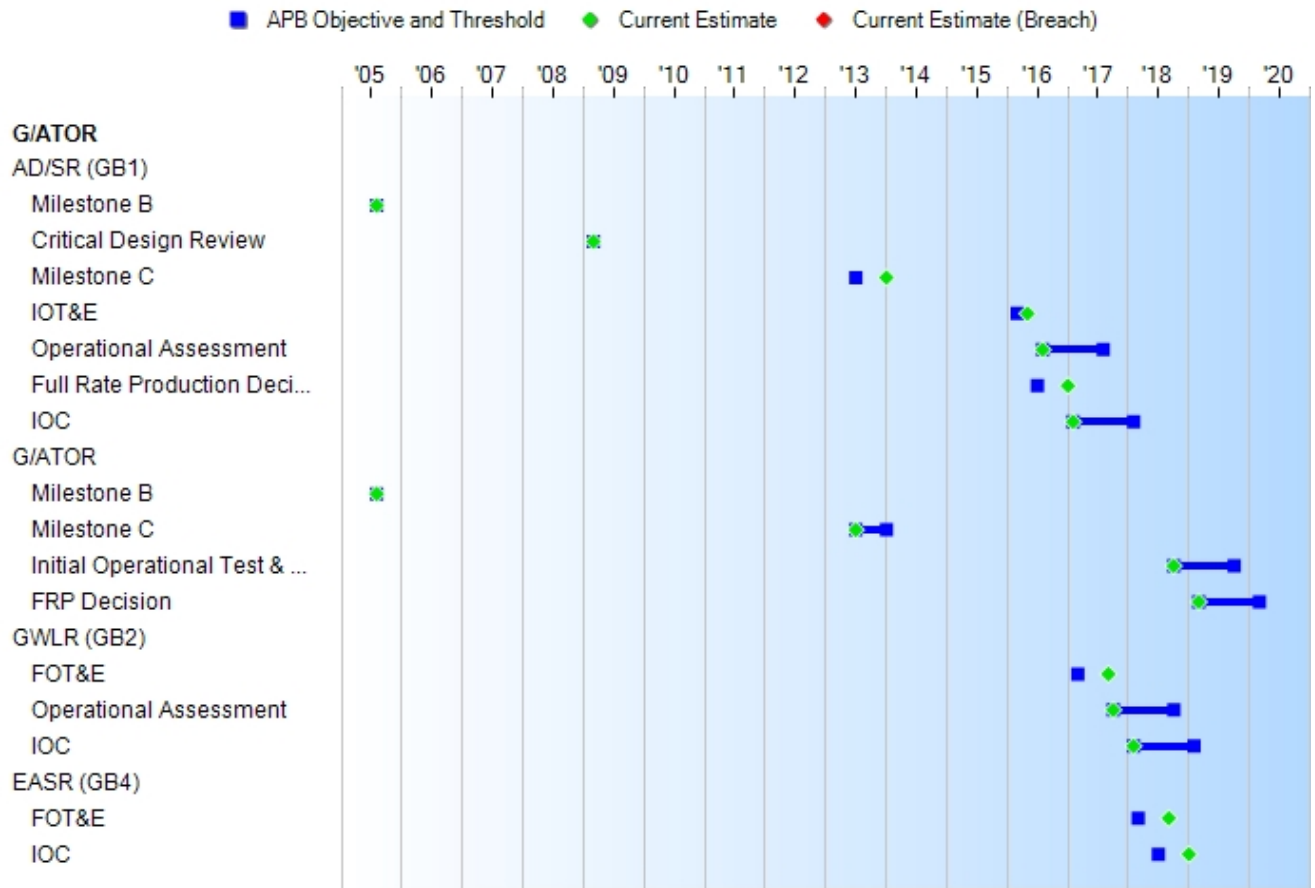
APB Breaches

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



Milestones	SAR Baseline Dev Est	Current APB Production Objective/Threshold		Current Estimate
AD/SR (GB1)				
Milestone B	AUG 2005	N/A	N/A	AUG 2005
Critical Design Review	MAR 2009	N/A	N/A	MAR 2009
Milestone C	JUL 2013	N/A	N/A	JAN 2014 (Ch-1)
IOT&E	MAR 2016	N/A	N/A	MAY 2016
Operational Assessment	N/A	AUG 2016	AUG 2017	AUG 2016 (Ch-2)
Full Rate Production Decision	JUL 2016	N/A	N/A	JAN 2017 (Ch-1)
IOC	AUG 2016	FEB 2017	FEB 2018	FEB 2017 (Ch-1)
G/ATOR				
Milestone B	N/A	AUG 2005	AUG 2005	AUG 2005 (Ch-2)
Milestone C	N/A	JUL 2013	JAN 2014	JUL 2013 (Ch-2)
Initial Operational Test & Evaluation	N/A	OCT 2018	OCT 2019	OCT 2018 (Ch-2)
FRP Decision	N/A	MAR 2019	MAR 2020	MAR 2019 (Ch-2)
GWLR (GB2)				
FOT&E	MAR 2017	N/A	N/A	SEP 2017 (Ch-1)
Operational Assessment	N/A	OCT 2017	OCT 2018	OCT 2017 (Ch-2)
IOC	AUG 2017	FEB 2018	FEB 2019	FEB 2018 (Ch-1)
EASR (GB4)				
FOT&E	MAR 2018	N/A	N/A	SEP 2018 (Ch-1)
IOC	JUL 2018	N/A	N/A	JAN 2019 (Ch-1)

Change Explanations

(Ch-1) As a result of the Milestone C approval in January 2014 the following milestone dates were revised: AD/SR (GB1) - Milestone C from December 2013 to January 2014; IOT&E from September 2016 to January 2017; Full Rate Production Decision from September 2016 to January 2017; IOC from September 2016 to February 2017. GWLR (GB2) – FOT&E from May 2017 to September 2017; IOC from September 2017 to February 2018. EASR (GB4) – FOT&E from May 2018 to September 2018; IOC from September 2018 to January 2019.

A revised APB is in process. Schedule adjustments are reflective of Director, Operational Test and Evaluation's input for an enhanced testing program.

(Ch-2) New schedule milestones added in support of production APB approved April 14, 2014.

Acronyms and Abbreviations

AD/SR - Air Defense/Surveillance Radar
EASR - Expeditionary Airport Surveillance Radar
FOT&E - Follow-on Operational Test & Evaluation
GB1/2/4 - Ground/Air Task Oriented Radar Block 1/2/4
GWLR - Ground Weapons Locating Radar
IOT&E - Initial Operational Test and Evaluation

Performance

Characteristics	SAR Baseline Dev Est	Current APB Production Objective/Threshold		Demonstrated Performance	Current Estimate	
AD/SR (GB1)		N/A	N/A			(Ch-1)
IER	Satisfy 100% of IER	N/A	N/A	N/A	N/A	(Ch-1)
DoD Integrated Architecture	Conform to applicable JROC/JCS approved/ validated DoD Integrated Architectures and applicable approved/ validated behavior models	N/A	N/A	N/A	N/A	(Ch-1)
C2 Interoperability	Meet GIG requirements to support interoperability with current C2 and Sensor Network information systems/ sources and those developed in the future for US National, Allied, Joint and Multinational (Coalition) Forces and Agencies	N/A	N/A	N/A	N/A	(Ch-1)
Probability of Firm Track for a Swerling Case 1 target with a Radar Cross Section (RCS) of Type 0, Type	0.95	N/A	N/A	N/A	N/A	(Ch-1)

1, and Type 2 (%)						
Range Accuracy (ft)	200	N/A	N/A	N/A	N/A	(Ch-1)
Height Accuracy	500 ft at 40 nm	N/A	N/A	N/A	N/A	(Ch-1)
Type 0 FTR (nm)	160	N/A	N/A	N/A	N/A	(Ch-1)
Type 1 FTR (nm)	100	N/A	N/A	N/A	N/A	(Ch-1)
Type 2 FTR (nm)	70	N/A	N/A	N/A	N/A	(Ch-1)
Combat ID	Modes 1, 2, 3/C, 4	N/A	N/A	N/A	N/A	(Ch-1)
Setup Time	Reconfigurable from mobility mode to operational mode in no more than 30 minutes by no more than 4 Marines dressed in standard camouflage uniform	N/A	N/A	N/A	N/A	(Ch-1)
Teardown Time	Reconfigurable from operational mode to mobility mode in no more than 45 minutes by no more than four Marines dressed in MOPP IV or cold weather gear	N/A	N/A	N/A	N/A	(Ch-1)
C130 Transportable	G/ATOR and all support equipment shall be internally transportable by a C-130	N/A	N/A	N/A	N/A	(Ch-1)
Combat Identification	Categorize by target class and type	N/A	N/A	N/A	N/A	(Ch-1)

External Lift MV-22/CH-53E	Components of the G/ATOR shall be configured to accommodate safe loading/unloading into/from its prime mover, into/from the C-130 variant and be capable of being externally lifted by the MV-22 or CH/MH-53D/E/K helicopters.	N/A	N/A	N/A	N/A	(Ch-1)
Net Ready	1) DISR mandated GIG IT standards and profiles identified in the TV-1; 2) DISR mandated GIG KIPs identified in the KIP declaration table; 3) NCOW RM Enterprise Services; 4) Information assurance requirements including availability, integrity, authentication, confidentiality and non-repudiation	N/A	N/A	N/A	N/A	(Ch-1)

	and issuance of an Approval to Operate by the DAA; and 5) Operationally effective information exchanges; and mission critical performance and information assurance attributes, data correctness, data availability, and consistent data processing, specified in the applicable joint and system integrated architecture views.					
GWLR (GB2)						(Ch-2)
Detection, Tracking and Classification (all ranges in (km))	(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))	(Ch-2)

Probability of location (acquisition)	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	(Ch-2)
Hostile Weapon Location (range in (m))	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 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.	TBD	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	(Ch-2)
Projectile Impact (CEP50)	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	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	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	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	(Ch-2)

	defined nominal environment.	defined nominal environment.	defined nominal environment.		defined nominal environment.	
Transportability	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	(Ch-2)
Net Ready	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.	(Ch-2)
EASR (GB4)						(Ch-1)
FAA Radar Commissioning Certification	The EASR, when interfaced with a MATC system, shall meet FAA radar commissioning certification requirements in accordance with FAAO 8200.1, USSFIM.	N/A	N/A	N/A	N/A	(Ch-1)
FAA Data Exchange	The EASR shall provide automated exchange of surveillance	N/A	N/A	N/A	N/A	(Ch-1)

	and tracking data in a format compatible with NAS and ICAO standards via applicable networks.					
Combat Identification	IFF Mode 5 (Level 3) capabilities IFF Mode S (Level 3) capabilities	N/A	N/A	N/A	N/A	(Ch-1)
Tier 1: Net-Centric Tier 2: Information Transport, Information Assurance						(Ch-2)
Enter and be managed in the network						(Ch-2)
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	N/A	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	(Ch-2)
Exchange information						(Ch-2)
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	N/A	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	TBD	Non Permissive	(Ch-2)

			Integrated Circuit (CTIC), CTIC DS-101 Hybrid (CDH) Permissive			
Tier 1: Battlespace Awareness Tier 2: Intelligence, Surveillance & Reconnaissance, Environment						(Ch-2)
Combat Identification (Block 1) (Applicable to Block 4)	N/A	(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).	(Ch-2)
Combat Identification (Block 1) (Applicable to Block 4)	N/A	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)	(Ch-2)
Tier 1: Logistics Tier 2: Operational Contract Support						(Ch-2)
Sustainment						(Ch-2)
Material Availability	N/A	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)	(Ch-2)
Operational availability	N/A	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)	(Ch-2)

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

Requirements Source

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

Change Explanations

(Ch-1) The performance characteristics for AD/SR (GB1) and EASR (GB4) have been changed to N/A to align with new approved capability production document.

(Ch-2) Various Milestones were added to the program of record as part of the approved Production APB dated April 14, 2014.

Acronyms and Abbreviations

AD/SR - Air Defense/Surveillance Radar
C2 - Command and Control
CEP50 - Circular Error Probable 50
DAA - Designated Approving Authority
DISR - DoD Information Technology Standards and Profile Registry
EASR - Expeditionary Airport Surveillance Radar
FAA - Federal Aviation Administration
FAAO - Federal Aviation Administration Order
ft - foot
FTR - Firm Track Range
GB1/2/4 - Ground/Air Task Oriented Radar Block 1/2/4
GIG - Global Information Grid
GWLR - Ground Weapons Locating Radar
IATO - Interim Authorization to Operate
ICAO - International Civil Aviation Organization
ID - Identification
IER - Information Exchange Requirement
IFF - Identification Friend or Foe
IT - Information Technology
JCS - Joint Chiefs of Staff
JROC - Joint Requirements Oversight Council
kils - milliradians
KIP - Key Interface Profile
km - Kilometers
m - meters
MATC - Marine Air Traffic Control
MOPP - Mission Oriented Protective Posture
NAS - Naval Air Station
NCOWRM - Net-Centric Operations and Warfare Reference Model
NCTI - Non-Cooperative Target Identification
NCTR - Non-Cooperative Target Recognition
nm - nautical mile
RCS - Radar Cross Section
TV - Technical Standards View
USSFIM - United States Standard Flight Inspection Manual

Track to Budget

RDT&E

Appn	BA	PE
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Navy 1319 07 0204460M

Project	Name
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C9C89

Notes: Ground/Air Task Oriented Radar (G/ATOR)

Navy 1319 04 0206313M

Project	Name
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C3099D

(Shared) (Sunk)

Notes: Added based on historical data. This line started its use with G/ATOR in 2004.

Navy 1319 07 0206313M

Project	Name
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C9C89B

G/ATOR (Shared) (Sunk)

Notes: Ground/Air Task Oriented Radar (G/ATOR)

Procurement

Appn	BA	PE
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Navy 1109 04 0206313M

Line Item	Name
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4650

(Shared)

Notes: Radar Systems

Navy 1109 04 0204460M

Line Item	Name
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4650

(Shared)

Notes: Radar Systems

Navy 1109 04 0506313M

Line Item	Name
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4650

(Shared)

Notes: Radar Systems

Navy 1109 04 0204460M

Line Item	Name
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4655

G/ATOR

Notes: New budget line item for PB15.

Navy 1109 07 0204460M

Line Item	Name
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7000

Notes:

Spares and Repairs Parts

(Shared)

Cost and Funding

Cost Summary

Total Acquisition Cost and Quantity

Appropriation	BY2012 \$M			BY2012 \$M	TY \$M		
	SAR Baseline Dev Est	Current APB Production Objective/Threshold		Current Estimate	SAR Baseline Dev Est	Current APB Production Objective	Current Estimate
RDT&E	878.2	986.5	1085.2	986.5	887.6	1019.2	1019.2
Procurement	2103.1	1625.3	1787.8	1625.3	2431.9	1894.8	1894.8
Flyaway	--	--	--	1524.0	--	--	1775.8
Recurring	--	--	--	1519.9	--	--	1771.6
Non Recurring	--	--	--	4.1	--	--	4.2
Support	--	--	--	101.3	--	--	119.0
Other Support	--	--	--	16.4	--	--	20.1
Initial Spares	--	--	--	84.9	--	--	98.9
MILCON	6.0	3.5	3.9	3.5	6.4	3.9	3.9
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	2987.3	2615.3	N/A	2615.3	3325.9	2917.9	2917.9

Confidence Level for Current APB Cost 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.

Quantity	SAR Baseline Dev Est	Current APB Production	Current Estimate
RDT&E	0	0	0
Procurement	57	45	45
Total	57	45	45

Cost and Funding

Funding Summary

Appropriation and Quantity Summary FY2015 President's Budget / December 2013 SAR (TY\$ M)

Appropriation	Prior	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	To Complete	Total
RDT&E	585.7	78.2	99.1	79.6	82.5	32.9	20.4	40.8	1019.2
Procurement	4.2	190.3	94.8	110.6	157.6	187.5	225.2	924.6	1894.8
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 2015 Total	589.9	268.5	197.8	190.2	240.1	220.4	245.6	965.4	2917.9
PB 2014 Total	679.8	185.1	167.4	331.7	310.7	277.4	242.2	219.5	2413.8
Delta	-89.9	83.4	30.4	-141.5	-70.6	-57.0	3.4	745.9	504.1

Quantity	Undistributed	Prior	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	To Complete	Total
Development		0	0	0	0	0	0	0	0	0
Production		0	0	4	2	2	3	4	6	24
PB 2015 Total		0	0	4	2	2	3	4	6	24
PB 2014 Total		0	2	3	2	8	8	8	8	6
Delta		0	-2	1	0	-6	-5	-4	-2	18

Cost and Funding

Annual Funding By Appropriation

Annual Funding TY\$

1319 | RDT&E | Research, Development, Test, and Evaluation, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway TY \$M	Non End Item Recurring Flyaway TY \$M	Non Recurring Flyaway TY \$M	Total Flyaway TY \$M	Total Support TY \$M	Total Program TY \$M
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	--	--	--	--	--	--	78.2
2015	--	--	--	--	--	--	99.1
2016	--	--	--	--	--	--	79.6
2017	--	--	--	--	--	--	82.5
2018	--	--	--	--	--	--	32.9
2019	--	--	--	--	--	--	20.4
2020	--	--	--	--	--	--	6.6
2021	--	--	--	--	--	--	--
2022	--	--	--	--	--	--	2.6
2023	--	--	--	--	--	--	--
2024	--	--	--	--	--	--	2.7
2025	--	--	--	--	--	--	--
2026	--	--	--	--	--	--	2.8
2027	--	--	--	--	--	--	--
2028	--	--	--	--	--	--	2.9
2029	--	--	--	--	--	--	--

2030	--	--	--	--	--	--	3.0
2031	--	--	--	--	--	--	--
2032	--	--	--	--	--	--	3.1
2033	--	--	--	--	--	--	--
2034	--	--	--	--	--	--	3.2
2035	--	--	--	--	--	--	--
2036	--	--	--	--	--	--	3.3
2037	--	--	--	--	--	--	--
2038	--	--	--	--	--	--	3.5
2039	--	--	--	--	--	--	--
2040	--	--	--	--	--	--	3.6
2041	--	--	--	--	--	--	--
2042	--	--	--	--	--	--	3.5
Subtotal	--	--	--	--	--	--	1019.2

Annual Funding BY\$

1319 | RDT&E | Research, Development, Test, and Evaluation, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2012 \$M	Non End Item Recurring Flyaway BY 2012 \$M	Non Recurring Flyaway BY 2012 \$M	Total Flyaway BY 2012 \$M	Total Support BY 2012 \$M	Total Program BY 2012 \$M
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	--	--	--	--	--	--	67.9
2014	--	--	--	--	--	--	74.3
2015	--	--	--	--	--	--	92.4
2016	--	--	--	--	--	--	72.8
2017	--	--	--	--	--	--	73.9
2018	--	--	--	--	--	--	28.9
2019	--	--	--	--	--	--	17.6
2020	--	--	--	--	--	--	5.6
2021	--	--	--	--	--	--	--
2022	--	--	--	--	--	--	2.1
2023	--	--	--	--	--	--	--
2024	--	--	--	--	--	--	2.1
2025	--	--	--	--	--	--	--
2026	--	--	--	--	--	--	2.1
2027	--	--	--	--	--	--	--
2028	--	--	--	--	--	--	2.1
2029	--	--	--	--	--	--	--
2030	--	--	--	--	--	--	2.1
2031	--	--	--	--	--	--	--
2032	--	--	--	--	--	--	2.1

2033	--	--	--	--	--	--	--
2034	--	--	--	--	--	--	2.0
2035	--	--	--	--	--	--	--
2036	--	--	--	--	--	--	2.0
2037	--	--	--	--	--	--	--
2038	--	--	--	--	--	--	2.1
2039	--	--	--	--	--	--	--
2040	--	--	--	--	--	--	2.0
2041	--	--	--	--	--	--	--
2042	--	--	--	--	--	--	1.9
Subtotal	--	--	--	--	--	--	986.5

Annual Funding TY\$
1109 | Procurement | Procurement, Marine Corps

Fiscal Year	Quantity	End Item Recurring Flyaway TY \$M	Non End Item Recurring Flyaway TY \$M	Non Recurring Flyaway TY \$M	Total Flyaway TY \$M	Total Support TY \$M	Total Program TY \$M
2012	--	--	--	4.2	4.2	--	4.2
2013	--	--	--	--	--	--	--
2014	4	177.6	--	--	177.6	12.7	190.3
2015	2	89.1	--	--	89.1	5.7	94.8
2016	2	104.6	1.1	--	105.7	4.9	110.6
2017	3	146.5	1.0	--	147.5	10.1	157.6
2018	4	175.0	1.6	--	176.6	10.9	187.5
2019	6	212.2	0.8	--	213.0	12.2	225.2
2020	8	284.1	2.2	--	286.3	17.3	303.6
2021	8	297.4	3.0	--	300.4	17.3	317.7
2022	8	271.2	2.0	--	273.2	16.5	289.7
2023	--	--	2.2	--	2.2	1.2	3.4
2024	--	--	--	--	--	10.2	10.2
Subtotal	45	1757.7	13.9	4.2	1775.8	119.0	1894.8

Annual Funding BY\$
1109 | Procurement | Procurement, Marine Corps

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2012 \$M	Non End Item Recurring Flyaway BY 2012 \$M	Non Recurring Flyaway BY 2012 \$M	Total Flyaway BY 2012 \$M	Total Support BY 2012 \$M	Total Program BY 2012 \$M
2012	--	--	--	4.1	4.1	--	4.1
2013	--	--	--	--	--	--	--
2014	4	167.3	--	--	167.3	11.9	179.2
2015	2	82.3	--	--	82.3	5.3	87.6
2016	2	94.8	1.0	--	95.8	4.4	100.2
2017	3	130.1	0.9	--	131.0	9.0	140.0
2018	4	152.4	1.4	--	153.8	9.5	163.3
2019	6	181.2	0.7	--	181.9	10.4	192.3
2020	8	237.8	1.8	--	239.6	14.6	254.2
2021	8	244.1	2.5	--	246.6	14.1	260.7
2022	8	218.2	1.6	--	219.8	13.3	233.1
2023	--	--	1.8	--	1.8	0.9	2.7
2024	--	--	--	--	--	7.9	7.9
Subtotal	45	1508.2	11.7	4.1	1524.0	101.3	1625.3

Annual Funding TY\$
1205 | MILCON | Military Construction,
Navy and Marine Corps

Fiscal Year	Total Program TY \$M
2015	3.9
Subtotal	3.9

Annual Funding BY\$
1205 | MILCON | Military Construction,
Navy and Marine Corps

Fiscal Year	Total Program BY 2012 \$M
2015	3.5
Subtotal	3.5

Funding line has not been established; awaiting MILCON approval.

Low Rate Initial Production

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

Foreign Military Sales

None

Nuclear Costs

None

Unit Cost**Unit Cost Report**

	BY2012 \$M	BY2012 \$M	
Unit Cost	Current UCR Baseline (APR 2014 APB)	Current Estimate (DEC 2013 SAR)	BY % Change

Program Acquisition Unit Cost (PAUC)

Cost	2615.3	2615.3	
Quantity	45	45	
Unit Cost	58.118	58.118	0.00

Average Procurement Unit Cost (APUC)

Cost	1625.3	1625.3	
Quantity	45	45	
Unit Cost	36.118	36.118	0.00

	BY2012 \$M	BY2012 \$M	
Unit Cost	Original UCR Baseline (MAY 2012 APB)	Current Estimate (DEC 2013 SAR)	BY % Change

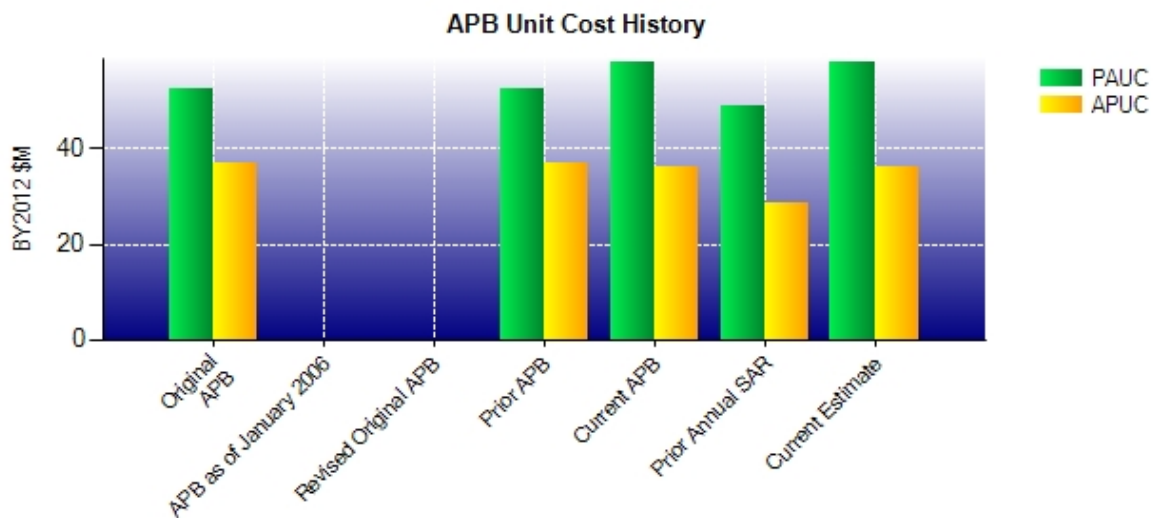
Program Acquisition Unit Cost (PAUC)

Cost	2987.3	2615.3	
Quantity	57	45	
Unit Cost	52.409	58.118	+10.89

Average Procurement Unit Cost (APUC)

Cost	2103.1	1625.3	
Quantity	57	45	
Unit Cost	36.896	36.118	-2.11

Unit Cost History



	Date	BY2012 \$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 2012	49.093	28.696	53.640	32.596
Current Estimate	DEC 2013	58.118	36.118	64.842	42.107

SAR Unit Cost History

Current SAR Baseline to Current Estimate (TY \$M)

Initial PAUC Dev Est	Changes								PAUC Current Est
	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)

Initial APUC Dev Est	Changes								APUC Current Est
	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

SAR Baseline History

Item/Event	SAR Planning Estimate (PE)	SAR Development Estimate (DE)	SAR Production Estimate (PdE)	Current Estimate
Milestone A	N/A	N/A	N/A	N/A
Milestone B	N/A	AUG 2005	N/A	AUG 2005
Milestone C	N/A	JUL 2013	N/A	JAN 2014
IOC	N/A	AUG 2016	N/A	FEB 2017
Total Cost (TY \$M)	N/A	3325.9	N/A	2917.9
Total Quantity	N/A	57	N/A	45
Prog. Acq. Unit Cost (PAUC)	N/A	58.349	N/A	64.842

Cost Variance

Summary Then Year \$M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Dev Est)	887.6	2431.9	6.4	3325.9
Previous Changes				
Economic	+7.8	+24.1	+0.2	+32.1
Quantity	--	-464.0	--	-464.0
Schedule	--	-9.4	--	-9.4
Engineering	--	--	--	--
Estimating	+45.0	-450.7	--	-405.7
Other	--	--	--	--
Support	--	-65.1	--	-65.1
Subtotal	+52.8	-965.1	+0.2	-912.1
Current Changes				
Economic	-3.8	-11.7	-0.1	-15.6
Quantity	--	--	--	--
Schedule	--	+46.0	--	+46.0
Engineering	--	--	--	--
Estimating	+82.6	+391.0	-2.6	+471.0
Other	--	--	--	--
Support	--	+2.7	--	+2.7
Subtotal	+78.8	+428.0	-2.7	+504.1
Adjustments	--	--	--	--
Total Changes	+131.6	-537.1	-2.5	-408.0
CE - Cost Variance	1019.2	1894.8	3.9	2917.9
CE - Cost & Funding	1019.2	1894.8	3.9	2917.9

Summary Base Year 2012 \$M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Dev Est)	878.2	2103.1	6.0	2987.3
Previous Changes				
Economic	--	--	--	--
Quantity	--	-369.7	--	-369.7
Schedule	--	--	-0.1	-0.1
Engineering	--	--	--	--
Estimating	+33.8	-388.9	--	-355.1
Other	--	--	--	--
Support	--	-53.2	--	-53.2
Subtotal	+33.8	-811.8	-0.1	-778.1
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	+74.5	+335.6	-2.4	+407.7
Other	--	--	--	--
Support	--	-1.6	--	-1.6
Subtotal	+74.5	+334.0	-2.4	+406.1
Adjustments	--	--	--	--
Total Changes	+108.3	-477.8	-2.5	-372.0
CE - Cost Variance	986.5	1625.3	3.5	2615.3
CE - Cost & Funding	986.5	1625.3	3.5	2615.3

Previous Estimate: December 2012

RDT&E	\$M	
	Base Year	Then Year
Current Change Explanations		
Revised escalation indices. (Economic)	N/A	-3.8
Adjustment for current and prior escalation. (Estimating)	+1.9	+1.9
Revised estimate to reflect actuals. (Estimating)	+0.9	+0.6
Revised estimate for government developmental and operational testing. (Estimating)	+29.2	+33.2
Revised estimate for Follow-on Block development and reliability growth. (Estimating)	+40.5	+43.8
Increase in Engineering Change Order/Engineering Change Proposal costs as a function of additional hardware procurement. (Estimating)	+2.0	+3.1
RDT&E Subtotal	+74.5	+78.8
Procurement	\$M	
	Base Year	Then Year
Current Change Explanations		
Revised escalation indices. (Economic)	N/A	-11.7
Adjustment for current and prior escalation. (Estimating)	+1.7	+1.7
Stretch-out of procurement buy profile associated with additional Director, Operational Test and Evaluation, requested procurement of additional Low Rate Initial Production assets to satisfy testing requirements for new technology. (Schedule)	0.0	+46.0
Revised estimate to reflect actuals. (Estimating)	-6.7	-6.9
Revised estimating methodology for cost associated with producibility enhanced initiatives. (Estimating)	+340.6	+396.2
Adjustment for current and prior escalation. (Support)	+0.1	+0.2
Increase in Other Support associated with the updated unit price. (Support)	+7.6	+9.8
Decrease in Initial Spares due to change in the factor for initial spares cost based on System Development and Demonstration actuals and other analogous programs. (Support)	-9.3	-7.3
Procurement Subtotal	+334.0	+428.0
MILCON	\$M	
	Base Year	Then Year
Current Change Explanations		
Revised escalation indices. (Economic)	N/A	-0.1
Revised estimate for reduced space needs and associated costs of facilities. (Estimating)	-2.4	-2.6
MILCON Subtotal	-2.4	-2.7

Contracts

General Contract Memo

Final report was submitted for contracts M67854-07-C-2072/1 and M67854-07-C-2072/2 in the 2013 Annual SAR.

The current contract does not meet the dollar threshold criteria for reporting. The G/ATOR LRIP contract is expected to be awarded 3rd Quarter FY 2014.

Deliveries and Expenditures

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

Expended and Appropriated (TY \$M)

Total Acquisition Cost	2917.9	Years Appropriated	11
Expended to Date	577.7	Percent Years Appropriated	28.21%
Percent Expended	19.80%	Appropriated to Date	858.4
Total Funding Years	39	Percent Appropriated	29.42%

The above data is current as of 3/10/2014.

Operating and Support Cost

G/ATOR

Assumptions and Ground Rules

Cost Estimate Reference:

The source of this estimate is the Service Cost Position of January 2014.

Sustainment Strategy:

The sustainment strategy includes organic support with contract support for the depot level.

The total Authorized Acquisition Objective (AAO) is 45.

Service Life is 20 years.

Antecedent Information:

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

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

Unitized O&S Costs BY2012 \$M			
Cost Element	G/ATOR Average Annual Cost Per System	AN/TPS-63B Radar (Antecedent) 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		--

Unitized Cost Comments:

Unitized cost = Average Annual Cost Per System * # of systems * Service Life = 2.799* 45 * 20 = 2519

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

Total O&S Costs Comments:

Total O&S variance is associated with anticipated producibility enhancements resulting in sustainment efficiencies.

O&S Cost Variance		
Category	Base Year 2012 \$M	Change Explanation
Prior SAR Total O&S Estimate December 2012	2,610.0	
Cost Estimating Methodology	-90.6	Revised estimating methodology which decreased Maintenance Cost.
Cost Data Update	0.0	
Labor Rate	0.0	
Energy Rate	0.0	
Technical Input	0.0	
Programmatic/Planning Factors	0.0	
Other	0.0	
Total Changes	-90.6	
Current Estimate	2,519.4	

Disposal Costs:

TY Disposal cost are \$5.0M.

BY Disposal cost are \$2.9M.