Selected Acquisition Report (SAR)

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

Ground/Air Task Oriented Radar (G/ATOR)

As of December 31, 2012

Defense Acquisition Management
Information Retrieval
(DAMIR)

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Program Information

Program Name

Ground/Air Task Oriented Radar (G/ATOR)

DoD Component

Navy

Responsible Office

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References

SAR Baseline (Development Estimate)

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

Approved APB

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

Mission and Description

The Ground/Air Task Oriented Radar (G/ATOR) is a single material solution for the mobile Multi-Role Radar System (MRRS) and Ground Weapons Locating Radar (GWLR) requirements. It is a three-dimensional (3D), 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 (MAGTF) spectrum replacing five legacy radar systems with a single solution. The Air Defense/ Surveillance Radar (AD/SR) G/ATOR Block 1 (GB1) provides capabilities in the Short Range Air Defense (SHORAD) and Air Surveillance mission areas; Ground Weapons Locating Radar (GWLR) G/ATOR Block 2 (GB2) will address Counter-fire Targeting Missions; and Expeditionary Airport Surveillance Radar (EASR) G/ATOR Block 4 (GB4) will address Air Traffic Control (ATC) missions. G/ATOR provides real-time radar measurement data to the Tactical Air Operations Module (TAOM), Common Aviation Command and Control System (CAC2S), Composite Tracking Network (CTN), and Advanced Field Artillery Tactical Data System (AFATDS). 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

The Assistant Secretary of the Navy, Research, Development and Acquisition (ASN (RD&A)) approved the Low Rate Initial Production (LRIP) Justification and Approval (J&A) on July 25, 2012. Admiral Winnifeld, Vice Chairman Joint Chiefs of Staff (VCJCS) signed the Joint Requirements Oversight Council Memorandum (JROCM) 188-12 of December 3, 2012 endorsing the G/ATOR Block 1 (GB1) Capability Production Document (CPD).

Developmental Testing (DT) for Radar Performance and Command and Control (C2) Integration for AD/SR (GB1) commenced in July 2012 with good performance demonstrated thus far. The latest Program Manager estimate reflects Milestone C which is scheduled for December 2013.

The Engineering and Manufacturing Development (EMD) phase of the program is fully resourced in the 2014 President's Budget (PB) which also supports procurement of Air Defense/Surveillance Radar (AD/SR) G/ATOR Block 1 (GB1) and Ground Weapons Locating Radar (GWLR) G/ATOR Block 2 (GB2). The Navy is pursuing the resourcing of Expeditionary Air Surveillance Radar (EASR) G/ATOR Block 4 (GB4) as part of a future Budget Build.

The Undersecretary of Defense for Acquisition, Technology and Logistics (USD (AT&L)) designated the G/ATOR program as an Acquisition Category (ACAT) IC Major Defense Acquisition Program (MDAP) with the Department of the Navy (DoN) as the lead component on October 28, 2011. ASN (RD&A) approved the Acquisition Strategy on March 12, 2012 to update the restructured program. The Naval Center for Cost Analysis (NCCA) established a Service Cost Position (SCP) to support the development of the Acquisition Program Baseline (APB) and the Deputy Assistant Secretary of the Navy Cost and Economics (DASN (C&E)) conducted the Cost Review Board (CRB) on April 9, 2012 resulting in a signed SCP Memo. ASN (RD&A) approved the APB on May 22, 2012.

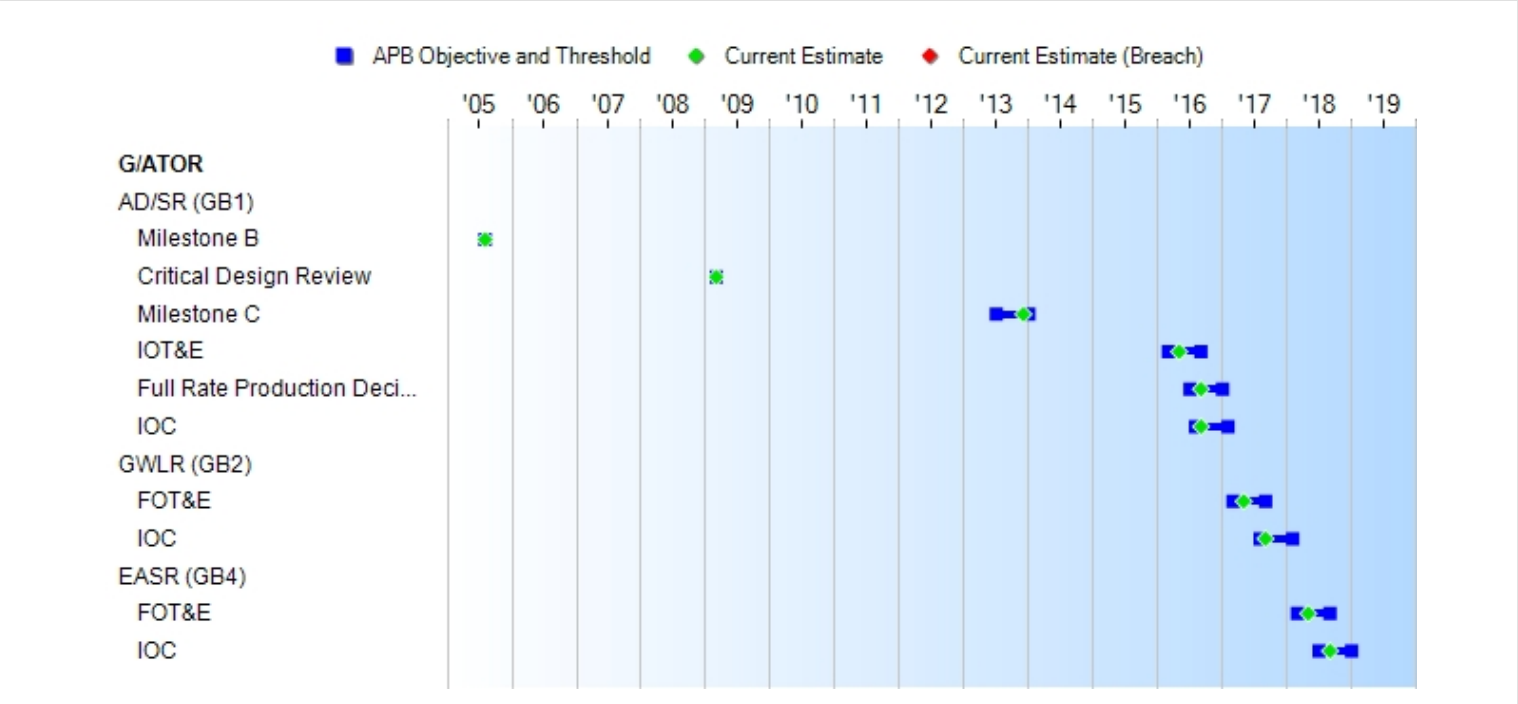
There are no significant software-related issues with this program at this time.

Threshold Breaches

APB Breaches		
Schedule		☐
Performance		☐
Cost	RDT&E	☐
	Procurement	☐
	MILCON	☐
	Acq O&M	☐
O&S Cost		☐
Unit Cost	PAUC	☐
	APUC	☐

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 Development Objective/Threshold		Current Estimate	
AD/SR (GB1)					
Milestone B	AUG 2005	AUG 2005	AUG 2005	AUG 2005	
Critical Design Review	MAR 2009	MAR 2009	MAR 2009	MAR 2009	
Milestone C	JUL 2013	JUL 2013	JAN 2014	DEC 2013	(Ch-1)
IOT&E	MAR 2016	MAR 2016	SEP 2016	MAY 2016	(Ch-1)
Full Rate Production Decision	JUL 2016	JUL 2016	JAN 2017	SEP 2016	(Ch-1)
IOC	AUG 2016	AUG 2016	FEB 2017	SEP 2016	(Ch-1)
GWLR (GB2)					
FOT&E	MAR 2017	MAR 2017	SEP 2017	MAY 2017	(Ch-1)
IOC	AUG 2017	AUG 2017	FEB 2018	SEP 2017	(Ch-1)
EASR (GB4)					
FOT&E	MAR 2018	MAR 2018	SEP 2018	MAY 2018	(Ch-1)
IOC	JUL 2018	JUL 2018	JAN 2019	SEP 2018	(Ch-1)

Acronyms And Abbreviations

AD/SR - Air Defense/Surveillance Radar
EASR - Expeditionary Airport Surveillance Radar
FOT&E - Follow-on Test and Evaluation
GB1 - Ground/Air Task Oriented Radar Block 1
GB2 - Ground/Air Task Oriented Radar Block 2
GB4 - Ground/Air Task Oriented Radar Block 4
GWLR - Ground Weapons Locating Radar
IOC - Initial Operational Capability
IOT&E - Initial Operational Test and Evaluation

Change Explanations

(Ch-1) Delays in Developmental Test caused the program schedule to misalign with bi-annual testing opportunities forcing Operational Assessment (OA) to be delayed until the fall of 2013. These delays have impacted Milestone C and all subsequent major program events. Changes as follows: AD/SR (GB1) - Milestone C from July 2013 to December 2013; Initial Operational Test and Evaluation from March 2016 to May 2016; Full Rate Production Decision from July 2016 to September 2016; Initial Operational Capability (IOC) from August 2016 to September 2016. GWLR (GB2) – Follow-on Test and Evaluation (FOT&E) from March 2017 to May 2017; IOC from August 2017 to September 2017. EASR (GB4) – FOT&E from March 2018 to May 2018; IOC from July 2018 to September 2018.

Performance

Characteristics	SAR Baseline Dev Est	Current APB Development Objective/Threshold		Demonstrated Performance	Current Estimate
AD/SR (GB1)					
Information Exchange Requirement	Satisfy 100% of Information Exchange Require-ments	Satisfy 100% of Information Exchange Require-ments	Satisfy 100% of Critical Information Exchange Require-ments	TBD	Satisfy 100% of Critical Information Exchange Require-ments
DoD Integrated Architecture	Conform to applicable JROC/JCS approved/ validated DoD Integrated Architectures and applicable approved/ validated behavior models	Conform to applicable JROC/JCS approved/ validated DoD Integrated Architectures and applicable approved/ validated behavior models (Objective= Threshold)	Conform to applicable JROC/JCS approved/ validated DoD Integrated Architectures and applicable approved/ validated behavior models	TBD	Conform to applicable JROC/JCS approved/ validated DoD Integrated Architectures and applicable approved/ validated behavior models
C2 Interoperability	Meet Global Information Grid requirements to support interoperabil-ity with current C2 and Sensor Network information systems/ sources and those developed in the future for US National, Allied, Joint and Multinational	Meet Global Information Grid requirements to support interoperabil-ity with current C2 and Sensor Network information systems/ sources and those developed in the future for US National, Allied, Joint and Multinational	Meet Global Information Grid requirements to support interoperabil-ity with current C2 and Sensor Network information systems/ sources and those developed in the future for US National, Allied, Joint and Multinational	TBD	Meet Global Information Grid requirements to support interloperabil-ity 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	(Coalition) Forces and Agencies (Objective= Threshold)	(Coalition) Forces and Agencies		(Coalition) Forces and Agencies
Probability of Firm Track for a Swerling Case 1 target with a Radar Cross Section (RCS) of Type 0, Type 1, and Type 2 (%)	0.95	0.95	0.90	TBD	0.90
Range Accuracy (ft)	200	200	300	TBD	300
Height Accuracy	500 ft at 40 nm	500 ft at 40 nm	1000 ft at 40 nm	TBD	800 ft at 40 nm
Type 0 FTR (nm)	160	160	0.5 – 120	TBD	135
Type 1 FTR (nm)	100	100	0.5 – 70	TBD	75
Type 2 FTR (nm)	70	70	0.5 – 40	TBD	40
Combat ID	Modes 1, 2, 3/C, 4	Modes 1, 2, 3/C, 4 (Objective= Threshold)	Modes 1, 2, 3/C, 4	TBD	Modes 1, 2, 3/C, 4
Setup Time	Reconfigur-able from mobility mode to operational mode in no more than 30 minutes by no more than 4 Marines dressed in standard camouflage uniform	Reconfigur-able from mobility mode to operational mode in no more than 30 minutes by no more than 4 Marines dressed in standard camouflage uniform	Reconfigur-able from mobility mode to operational mode in no more than 60 minutes by no more than 4 Marines dressed in standard camouflage uniform	TBD	Reconfigur-able from mobility mode to operational mode in no more than 30 minutes by no more than 4 Marines dressed in standard camouflage uniform.
Teardown Time	Reconfigur-able from operational mode to mobility mode in no more than 45 minutes by no more than four Marines dressed in	Reconfigur-able from operational mode to mobility mode in no more than 45 minutes by no more than four Marines dressed in	Reconfigur-able from operational mode to mobility mode in no more than 60 minutes by no more than four Marines dressed in	TBD	Reconfigur-able 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	MOPP IV or cold weather gear	MOPP IV or cold weather gear		MOPP IV or cold weather gear.
C130 Transportable	G/ATOR and all support equipment shall be internally transportable by a C-130	G/ATOR and all support equipment shall be internally transportable by a C-130 (Objective= Threshold)	G/ATOR and all support equipment shall be internally transportable by a C-130	TBD	G/ATOR and all support equipment shall be internally transportable by a C-130.
Combat Identification	Categorize by target class and type	Categorize by target class and type	Radar shall incorporate NCTR and NCTI technology to allow for classification of unknown and threat targets by class (cruise missile, fixed wing aircraft, helicopter, etc.)	TBD	Radar shall incorporate NCTR and NCTI technology to allow for classification of unknown and threat targets by class (cruise missile, fixed wing aircraft, helicopter, etc.)
External Lift MV-22/CH-53E	Components of the G/ATOR shall be configured to accommo-date 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.	Components of the G/ATOR shall be configured to accommo-date 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. (Objective=	Components of the G/ATOR shall be configured to accommo-date 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.	TBD	Components of the G/ATOR shall be configured to accommo-date 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.

		Threshold)			
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, authenticat-ion, confidential-ity and non-repudiation 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	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, authenticat-ion, confidential-ity and non-repudiation 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	1) DISR mandated GIG IT standards and profiles identified in the TV-1; 2) DISR mandated GIG KIPs identified in the KIP declaration 1104 table; 3) NCOW RM Enterprise Services; 4) Information assurance requirements including availability, integrity, authenticat-ion, confidentiality and non-repudiation and issuance of an IATO by the DAA; and 5) Operationally effective information exchanges; and mission critical performance and information assurance attributes, data correctness, data processing, specified in	TBD	1) DISR mandated GIG IT standards and profiles identified in the TV-1; 2) DISR mandated GIG KIPs identified in the KIP declaration 1104 table; 3) NCOW RM Enterprise Services; 4) Information assurance requirements including availability, integrity, authenticat-ion, confidential-ity and non-repudiation and issuance of an IATO by the DAA; and 5) Operationally effective information exchanges; and mission critical performance and information assurance attributes, data correctness, data processing, specified in

	consistent data processing, specified in the applicable joint and system integrated architecture views.	consistent data processing, specified in the applicable joint and system integrated architecture views.	the applicable joint and system integrated architecture views.		the applicable joint and system integrated architecture views.
GWLR (GB2)					
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))
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.
Hostile Weapon Location (range in	The CEP50 of weapon	The CEP50 of weapon	The CEP50 of weapon	TBD	The CEP50 of weapon

(m))	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.	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.		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.
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 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.
Transportability	C-130 drive-on, drive-off	C-130 drive-on, drive-off (Objective= Threshold)	C-130 drive-on, drive-off	TBD	C-130 drive-on, drive-off.
Net Ready	100% of interfaces certified; services; policy-enforcement controls; and data correctness, availability and processing requirements in the Joint integrated	100% of interfaces certified; services; policy-enforcement controls; and data correctness, availability and processing requirements in the Joint integrated	100% of interfaces certified; services; policy-enforcement controls; and data correctness, availability and processing requirements designated as	TBD	100 percent of interfaces certified; services; policy-enforcement controls; and data correctness, availability and processing requirements designated as

	architecture.	architecture.	enterprise-level or critical in the Joint integrated architecture.		enterprise-level or critical in the Joint integrated architecture.
EASR (GB4)					
FAA Radar Commissioning Certification	The EASR, when interfaced with a MATC system, shall meet FAA radar commission-ing certification requirements in accordance with FAAO 8200.1, USSFIM.	The EASR, when interfaced with a MATC system, shall meet FAA radar commission-ing certification requirements in accordance with FAAO 8200.1, USSFIM. (Objective= Threshold)	The EASR, when interfaced with a MATC system, shall meet FAA radar commission-ing certification requirements in accordance with FAAO 8200.1, USSFIM.	TBD	The EASR, when interfaced with a MATC system, shall meet FAA radar commis-sioning certification requirements in accordance with FAAO 8200.1, USSFIM.
FAA Data Exchange	The EASR shall provide automated exchange of surveillance and tracking data in a format compatible with NAS and ICAO standards via applicable networks.	The EASR shall provide automated exchange of surveillance and tracking data in a format compatible with NAS and ICAO standards via applicable networks. (Objective= Threshold)	The EASR shall provide automated exchange of surveillance and tracking data in a format compatible with NAS and ICAO standards via applicable networks.	TBD	The EASR shall provide automated exchange of surveillance 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	IFF Mode 5 (Level 3) capabilities IFF Mode S (Level 3) capabilities	Radar shall be capable of transmitting and receiving IFF: Mode 1, 2, 3/A, C, 4, Mode 5	TBD	Radar shall be capable of transmitting and receiving IFF: Mode 1, 2, 3/A, C, 4, Mode 5

			(level 2) and Mode S (level 2)		(level 2) and Mode S (level 2)

Requirements Source: Operational Requirements Document (ORD) dated July 20, 2004

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
DoD - Department of Defense
EASR - Expeditionary Airport Surveillance Radar
FAA - Federal Aviation Administration
FAAO - Federal Aviation Administration Order
ft - foot
FTR - Firm Track Range
GB1 - Ground/Air Task Oriented Radar Block 1
GB2 - Ground/Air Task Oriented Radar Block 2
GB4 - Ground/Air Task Oriented Radar Block 4
GIG - Global Information Grid
IATO - Interim Authorization to Operate
ICAO - International Civil Aviation Organization
IFF - Identification Friend or Foe
IT - Information Technology
JCS - Joint Chiefs of Staff
JROC - Joint Requirements Oversight Council
KIP - Key Interface Profile
km - Kilometers
m - meters
MATC - Marine Air Traffic Control
mils - milliradians
MOPP - Mission Oriented Protective Posture
NAS - Naval Air Station
NCOW RM - Net-Centric Operations and Warfare Reference Model
NCTI - Non-Cooperative Target Identification
NCTR - Non-Cooperative Target Recognition
nm - nautical mile
RCS - Radar Cross Section
TBD - To Be Determined
TV - Technical Standards View
US - United States
USSFIM - United States Standard Flight Inspection Manual

Change Explanations

None

Memo

Performance Characteristic Air Defense/Surveillance Radar (AD/SR) Ground/Air Task Oriented Radar Block 1 (GB1) - Combat Identification, was deferred based on Marine Requirements Oversight Council (MROC) Decision Memorandum (DM) 26 – 2010.

Performance Characteristic Expeditionary Airport Surveillance Radar (EASR) Ground/Air Task Oriented Radar Block 4 (GB4) - Combat Identification MROC DM 26 – 2010 approved the movement of this Key Performance Parameter (KPP) to GB4.

Track To Budget

RDT&E				
APPN 1319	BA 07	PE 0204460M	(Navy)	
	Project C9C89	Ground/Air Task Oriented Radar (G/ATOR)		
APPN 1319	BA 07	PE 0206313M	(Navy)	
	Project C9C89	Ground/Air Task Oriented Radar (G/ATOR)		(Sunk)
Procurement				
APPN 1109	BA 04	PE 0204460M	(Navy)	
	ICN 4650	Radar Systems	(Shared)	
APPN 1109	BA 04	PE 0206313M	(Navy)	
	ICN 4650	Radar Systems	(Shared)	
APPN 1109	BA 04	PE 0506313M	(Navy)	
	ICN 4650	Radar Systems	(Shared)	
APPN 1109	BA 07	PE 0204460M	(Navy)	
	ICN 7000	Spares and Repair Parts	(Shared)	
MILCON				

Funding line has not been established; awaiting Military Construction (MILCON) approval.

Cost and Funding

Cost Summary

Total Acquisition Cost and Quantity

Appropriation	BY2012 $M			BY2012 $M	TY $M		
	SAR Baseline Dev Est	Current APB Development Objective/Threshold		Current Estimate	SAR Baseline Dev Est	Current APB Development Objective	Current Estimate
RDT&E	878.2	878.2	966.0	912.0	887.6	887.6	940.4
Procurement	2103.1	2103.1	2313.4	1291.3	2431.9	2431.9	1466.8
Flyaway	1947.0	--	--	1188.4	2251.0	--	1349.6
Recurring	1944.6	--	--	1165.8	2248.5	--	1325.5
Non Recurring	2.4	--	--	22.6	2.5	--	24.1
Support	156.1	--	--	102.9	180.9	--	117.2
Other Support	19.9	--	--	8.8	23.1	--	10.3
Initial Spares	136.2	--	--	94.1	157.8	--	106.9
MILCON	6.0	6.0	6.6	5.9	6.4	6.4	6.6
Acq O&M	0.0	0.0	--	0.0	0.0	0.0	0.0
Total	2987.3	2987.3	N/A	2209.2	3325.9	3325.9	2413.8

Confidence Level for Current APB Cost 50% - The Independent Cost Estimate (ICE) to support the Ground/Air Task Oriented Radar (G/ATOR) program to establish a new 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.

Current Estimate reflects the anticipated production efficiencies. The fifty-seven (57) systems are currently authorized in the Acquisition Program Baseline (APB); however, forty-five (45) systems are currently funded in the FY 2014 President's Budget (PB).

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

The fifty-seven (57) systems are currently authorized in the Acquisition Program Baseline (APB); however, forty-five (45) systems are currently funded in FY 2014 President's Budget (PB).

Cost and Funding

Funding Summary

Appropriation and Quantity Summary
FY2014 President's Budget / December 2012 SAR (TY$ M)

Appropriation	Prior	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	To Complete	Total
RDT&E	510.0	75.1	78.2	77.4	74.7	49.9	19.9	55.2	940.4
Procurement	4.3	90.4	106.9	83.4	257.0	260.8	257.5	406.5	1466.8
MILCON	0.0	0.0	0.0	6.6	0.0	0.0	0.0	0.0	6.6
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2014 Total	514.3	165.5	185.1	167.4	331.7	310.7	277.4	461.7	2413.8
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Program funding and production quantities listed in this SAR are consistent with the FY 2014 President's Budget (PB). The FY 2014 PB did not reflect the enacted DoD appropriation for FY 2013, nor sequestration; it reflected the President's requested amounts for FY 2013.

Quantity	Undistributed	Prior	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	To Complete	Total
Development	0	0	0	0	0	0	0	0	0	0
Production	0	0	2	3	2	8	8	8	14	45
PB 2014 Total	0	0	2	3	2	8	8	8	14	45
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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	--	--	--	--	--	--	88.8
2009	--	--	--	--	--	--	127.4
2010	--	--	--	--	--	--	67.2
2011	--	--	--	--	--	--	57.8
2012	--	--	--	--	--	--	102.5
2013	--	--	--	--	--	--	75.1
2014	--	--	--	--	--	--	78.2
2015	--	--	--	--	--	--	77.4
2016	--	--	--	--	--	--	74.7
2017	--	--	--	--	--	--	49.9
2018	--	--	--	--	--	--	19.9
2019	--	--	--	--	--	--	12.3
2020	--	--	--	--	--	--	9.6
2021	--	--	--	--	--	--	2.5
2022	--	--	--	--	--	--	--
2023	--	--	--	--	--	--	2.6
2024	--	--	--	--	--	--	--
2025	--	--	--	--	--	--	2.7
2026	--	--	--	--	--	--	--
2027	--	--	--	--	--	--	2.8
2028	--	--	--	--	--	--	--
2029	--	--	--	--	--	--	2.9

2030	--	--	--	--	--	--	--
2031	--	--	--	--	--	--	3.0
2032	--	--	--	--	--	--	--
2033	--	--	--	--	--	--	3.1
2034	--	--	--	--	--	--	--
2035	--	--	--	--	--	--	3.2
2036	--	--	--	--	--	--	--
2037	--	--	--	--	--	--	3.4
2038	--	--	--	--	--	--	--
2039	--	--	--	--	--	--	3.5
2040	--	--	--	--	--	--	--
2041	--	--	--	--	--	--	3.6
Subtotal	**--**	**--**	**--**	**--**	**--**	**--**	**940.4**

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	--	--	--	--	--	--	93.3
2009	--	--	--	--	--	--	132.2
2010	--	--	--	--	--	--	68.7
2011	--	--	--	--	--	--	57.6
2012	--	--	--	--	--	--	100.1
2013	--	--	--	--	--	--	72.0
2014	--	--	--	--	--	--	73.5
2015	--	--	--	--	--	--	71.4
2016	--	--	--	--	--	--	67.7
2017	--	--	--	--	--	--	44.3
2018	--	--	--	--	--	--	17.4
2019	--	--	--	--	--	--	10.5
2020	--	--	--	--	--	--	8.1
2021	--	--	--	--	--	--	2.1
2022	--	--	--	--	--	--	--
2023	--	--	--	--	--	--	2.1
2024	--	--	--	--	--	--	--
2025	--	--	--	--	--	--	2.1
2026	--	--	--	--	--	--	--
2027	--	--	--	--	--	--	2.1
2028	--	--	--	--	--	--	--
2029	--	--	--	--	--	--	2.1
2030	--	--	--	--	--	--	--
2031	--	--	--	--	--	--	2.0
2032	--	--	--	--	--	--	--

2033	--	--	--	--	--	--	2.0
2034	--	--	--	--	--	--	--
2035	--	--	--	--	--	--	2.0
2036	--	--	--	--	--	--	--
2037	--	--	--	--	--	--	2.1
2038	--	--	--	--	--	--	--
2039	--	--	--	--	--	--	2.1
2040	--	--	--	--	--	--	--
2041	--	--	--	--	--	--	2.0
Subtotal	**--**	**--**	**--**	**--**	**--**	**--**	**912.0**

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	--	--	--	4.3	4.3	--	4.3
2013	2	80.6	--	2.4	83.0	7.4	90.4
2014	3	90.5	--	9.3	99.8	7.1	106.9
2015	2	67.3	2.4	8.1	77.8	5.6	83.4
2016	8	234.5	1.2	--	235.7	21.3	257.0
2017	8	236.5	2.5	--	239.0	21.8	260.8
2018	8	233.6	2.7	--	236.3	21.2	257.5
2019	8	211.8	1.3	--	213.1	16.8	229.9
2020	6	158.9	1.7	--	160.6	14.4	175.0
2021	--	--	--	--	--	1.1	1.1
2022	--	--	--	--	--	0.5	0.5
Subtotal	**45**	**1313.7**	**11.8**	**24.1**	**1349.6**	**117.2**	**1466.8**

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	--	--	--	4.2	4.2	--	4.2
2013	2	76.6	--	2.3	78.9	7.0	85.9
2014	3	84.4	--	8.7	93.1	6.6	99.7
2015	2	61.6	2.2	7.4	71.2	5.1	76.3
2016	8	210.5	1.1	--	211.6	19.1	230.7
2017	8	208.4	2.2	--	210.6	19.2	229.8
2018	8	202.0	2.3	--	204.3	18.3	222.6
2019	8	179.7	1.1	--	180.8	14.3	195.1
2020	6	132.3	1.4	--	133.7	12.0	145.7
2021	--	--	--	--	--	0.9	0.9
2022	--	--	--	--	--	0.4	0.4
Subtotal	**45**	**1155.5**	**10.3**	**22.6**	**1188.4**	**102.9**	**1291.3**

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

Fiscal Year	Total Program TY $M
2015	6.6
Subtotal	**6.6**

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

Fiscal Year	Total Program BY 2012 $M
2015	5.9
Subtotal	**5.9**

Funding line has not been established; awaiting Military Construction (MILCON) approval.

Low Rate Initial Production

There are no LRIP quantities until the Milestone C Decision which is scheduled for December 2013.

Foreign Military Sales

None

Nuclear Cost

None

Unit Cost

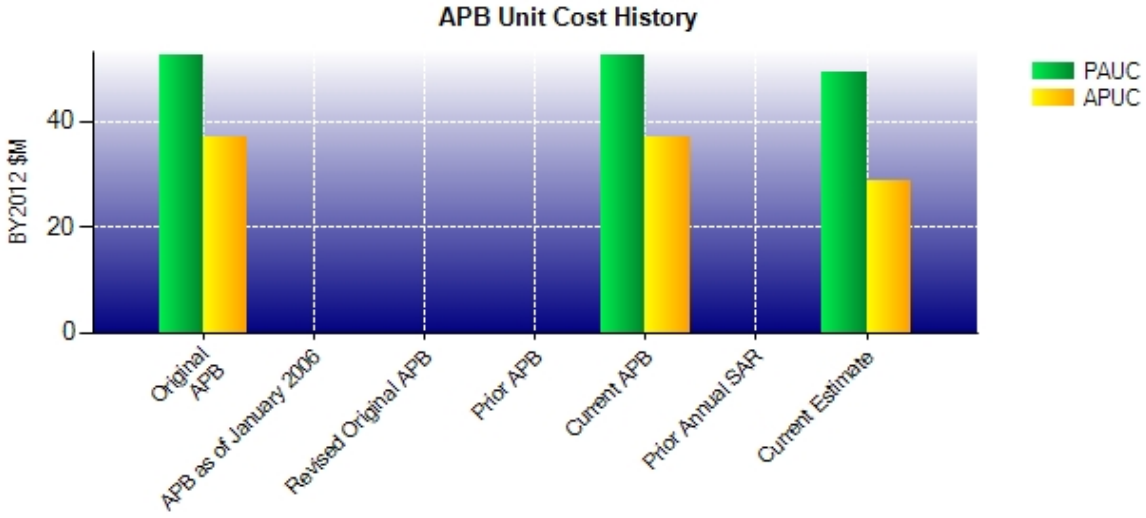
Unit Cost Report

	BY2012 $M	BY2012 $M	
Unit Cost	**Current UCR Baseline (MAY 2012 APB)**	**Current Estimate (DEC 2012 SAR)**	**BY % Change**
Program Acquisition Unit Cost (PAUC)			
Cost	2987.3	2209.2	
Quantity	57	45	
Unit Cost	52.409	49.093	-6.33
Average Procurement Unit Cost (APUC)			
Cost	2103.1	1291.3	
Quantity	57	45	
Unit Cost	36.896	28.696	-22.23

	BY2012 $M	BY2012 $M	
Unit Cost	**Original UCR Baseline (MAY 2012 APB)**	**Current Estimate (DEC 2012 SAR)**	**BY % Change**
Program Acquisition Unit Cost (PAUC)			
Cost	2987.3	2209.2	
Quantity	57	45	
Unit Cost	52.409	49.093	-6.33
Average Procurement Unit Cost (APUC)			
Cost	2103.1	1291.3	
Quantity	57	45	
Unit Cost	36.896	28.696	-22.23

The Engineering and Manufacturing Development (EMD) phase of the program is fully resourced in the FY 2014 President's Budget (PB) which also supports procurement of Air Defense/Surveillance Radar (AD/SR) G/ATOR Block 1 (GB1) and Ground Weapons Locating Radar (GWLR) G/ATOR Block 2 (GB2) for a total of forty-five (45) systems. The Navy is pursuing the resourcing of Expeditionary Air Surveillance Radar (EASR) G/ATOR Block 4 (GB4) as part of a future Budget Build for a total of twelve (12) systems. A total of fifty-seven (57) systems are authorized in the current Acquisition Program Baseline (APB).

Unit Cost History



		BY2012 $M		TY $M	
	Date	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	N/A	N/A	N/A	N/A	N/A
Current APB	MAY 2012	52.409	36.896	58.349	42.665
Prior Annual SAR	N/A	N/A	N/A	N/A	N/A
Current Estimate	DEC 2012	49.093	28.696	53.640	32.596

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	0.713	5.250	-0.209	0.000	-9.016	0.000	-1.447	-4.709	53.640

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	0.536	1.067	-0.209	0.000	-10.016	0.000	-1.447	-10.069	32.596

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	DEC 2013
IOC	N/A	AUG 2016	N/A	SEP 2016
Total Cost (TY $M)	N/A	3325.9	N/A	2413.8
Total Quantity	N/A	57	N/A	45
Prog. Acq. Unit Cost (PAUC)	N/A	58.349	N/A	53.640

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	--	+4.4	--	+4.4
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	--	-4.4	--	-4.4
Other	--	--	--	--
Support	--	--	--	--
Subtotal	--	--	--	--
Current Changes				
Economic	+7.8	+19.7	+0.2	+27.7
Quantity	--	-464.0	--	-464.0
Schedule	--	-9.4	--	-9.4
Engineering	--	--	--	--
Estimating	+45.0	-446.3	--	-401.3
Other	--	--	--	--
Support	--	-65.1	--	-65.1
Subtotal	+52.8	-965.1	+0.2	-912.1
Total Changes	+52.8	-965.1	+0.2	-912.1
CE - Cost Variance	940.4	1466.8	6.6	2413.8
CE - Cost & Funding	940.4	1466.8	6.6	2413.8

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	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	--	-3.5	--	-3.5
Other	--	--	--	--
Support	--	-0.2	--	-0.2
Subtotal	--	-3.7	--	-3.7
Current Changes				
Economic	--	--	--	--
Quantity	--	-369.7	--	-369.7
Schedule	--	--	-0.1	-0.1
Engineering	--	--	--	--
Estimating	+33.8	-385.4	--	-351.6
Other	--	--	--	--
Support	--	-53.0	--	-53.0
Subtotal	+33.8	-808.1	-0.1	-774.4
Total Changes	+33.8	-811.8	-0.1	-778.1
CE - Cost Variance	912.0	1291.3	5.9	2209.2
CE - Cost & Funding	912.0	1291.3	5.9	2209.2

Previous Estimate: June 2012

RDT&E	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+7.8
Adjustment for current and prior escalation. (Estimating)	-2.9	-2.9
Increase in cost estimate due to assumptions in technology refresh and associated minor potential future change orders. (Estimating)	+18.1	+18.8
Adjustment to reflect execution year adjustments (FY 2012). (Estimating)	-4.1	-4.2
Increase in cost estimate due to investment in production efficiency initiative. (Estimating)	+22.7	+33.3
RDT&E Subtotal	+33.8	+52.8

Procurement	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+19.7
Total Quantity variance resulting from a decrease of 12 G/ATOR systems from 57 to 45. (Subtotal)	-369.0	-463.1
Quantity variance resulting from a decrease of 12 G/ATOR systems. (Quantity) (QR)	(-369.7)	(-464.0)
Allocation to Estimating resulting from Quantity change. (Estimating) (QR)	(+0.7)	(+0.9)
Acceleration of procurement buy profile. FY 2014 President's Budget (PB) reflects changing the production rate from 6 to 8 systems per year maximizing the production rate efficiencies. (Schedule)	0.0	-9.4
Adjustment for current and prior escalation. (Estimating)	-0.3	-0.2
Revised cost estimate due to anticipated production efficiencies associated with funded design investments. (Estimating)	-385.8	-447.0
Adjustment for current and prior escalation. (Support)	+0.1	0.0
Decrease in Initial Spares. Investment in efficiencies and economic order discounts has reduced the level of support spares required. (Support)	-42.0	-52.2
Decrease in Other Support. Investment in efficiencies and economic order discounts has reduced the level of other support required. (Support)	-11.1	-12.9
Procurement Subtotal	-808.1	-965.1

(QR) Quantity Related

MILCON	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+0.2
Funding line has not been established; dollars have slipped one year to coincide with the pending Military Construction (MILCON) cycle. (Schedule)	-0.1	0.0
MILCON Subtotal	-0.1	+0.2

Contracts

Appropriation: RDT&E	
Contract Name	**AD/SR (GB1) EMD Phase: EV Reporting**
Contractor	Northrop Grumman Corporation
Contractor Location	1580A W Nursery Road Linthicum Heights, MD 21090
Contract Number, Type	M67854-07-C-2072/1, CPIF
Award Date	March 30, 2007
Definitization Date	March 30, 2007

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
92.9	N/A	1	394.0	N/A	1	417.0	421.0

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (2/23/2013)	-24.4	-5.4
Previous Cumulative Variances	-20.7	-4.0
Net Change	-3.7	-1.4

Cost And Schedule Variance Explanations

The unfavorable net change in the cost variance is due to to unplanned additional integration, test, and software support for Developmental Test and Operational Assessment (DT/OA) efforts. Additional work was required to address system integration & software glitches and late material deliveries.

The unfavorable net change in the schedule variance is due to delays completing developmental testing, software drops, missing material and firmware. These areas have been the dominant drivers and resulted in approximately a six week delay; this delay resulted in the program schedule misaligning with the testing opportunity at Yuma, Arizona forcing the operational assessment to be delayed until the fall. This is captured in the revised Program Manger's schedule estimate.

Contract Comments

This contract is more than 90% complete; therefore, this is the final report for this contract.

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to program rebaselining associated with change from Acquisition Category (ACAT) II to ACAT I in 2009-2010. The remaining difference is attributed to additional cost and schedule variances.

The basic contract includes the Engineering and Manufacturing Development (EMD) phase and Low Rate Initial Production (LRIP) units.

Appropriation: RDT&E

Contract Name	**AD/SR (GB1) EMD Phase: Non-EV Reporting**
Contractor	Northrop Grumman Corporation
Contractor Location	1580A W Nursery Road Linthicum Heights, MD 21090
Contract Number, Type	M67854-07-C-2072/2, FFP
Award Date	March 30, 2007
Definitization Date	March 30, 2007

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
15.6	N/A	N/A	15.6	N/A	N/A	15.6	15.6

Cost And Schedule Variance Explanations

Cost and Schedule variance reporting is not required on this FFP contract.

Contract Comments

This is the first time this contract is being reported.

Effort is a part of the CPIF contract, but theseare Level Of Effort in nature and are not a part of the Earned Value (EV)reporting CLINs on this contract vehicle. These CLINs are not in direct support of the Engineering and Manufacturing Development Phase.

Deliveries and Expenditures

Deliveries To Date	Plan To Date	Actual To Date	Total Quantity	Percent Delivered
Development	0	0	0	--
Production	0	0	45	0.00%
Total Program Quantities Delivered	0	0	45	0.00%

Expenditures and Appropriations (TY $M)			
Total Acquisition Cost	2413.8	Years Appropriated	10
Expenditures To Date	505.4	Percent Years Appropriated	26.32%
Percent Expended	20.94%	Appropriated to Date	679.8
Total Funding Years	38	Percent Appropriated	28.16%

The above data is current as of 3/31/2013.

Operating and Support Cost

G/ATOR

Assumptions and Ground Rules

Cost Estimate Reference:
The source of this estimate is the Program Life Cycle Cost Estimate (PLCCE) of September 2012.

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:
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	0.3	0.0
Unit Operations	0.0	0.0
Maintenance	1.2	0.0
Sustaining Support	0.4	0.0
Continuing System Improvements	0.5	0.0
Indirect Support	0.0	0.0
Other	0.0	0.0
Total	2.4	--

Unitized Cost Comments:
None

	Total O&S Cost $M			
	Current Development APB Objective/Threshold		Current Estimate	
	G/ATOR		G/ATOR	AN/TPS-63B Radar (Antecedent)
Base Year	2610.0	2871.0	2189.0	N/A
Then Year	3513.0	N/A	3083.0	N/A

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

Disposal Costs

TY Disposal cost are $9M.

BY Disposal cost are $6M.

These cost are not included in the O&S figures above.