Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-237

Global Broadcast Service (GBS)

As of December 31, 2012

Defense Acquisition Management
Information Retrieval
(DAMIR)

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Program Information

Program Name

Global Broadcast Service (GBS)

DoD Component

Air Force

Joint Participants

Army; Navy; Marine Corps

Responsible Office

Responsible Office

Mr. David W. Madden
SMC/MC
483 N. Aviation Blvd.
El Segundo, CA 90245-2802
david.madden@losangeles.af.mil

Phone 310-653-9001
Fax 310-653-9636
DSN Phone 633-9001
DSN Fax 633-9636
Date Assigned July 19, 2010

References

SAR Baseline (Development Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated November 14, 1997

Approved APB

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated September 15, 2006

Mission and Description

The Global Broadcast Service (GBS) is an extension of the Global Information Grid that provides worldwide, high capacity, one-way transmission of video (especially from Unmanned Aerial Vehicles), imagery and geospatial intelligence products, and other high-bandwidth information supporting the nation's command centers and joint combat forces in garrison, in transit, and deployed within global combat zones. It employs readily available satellite-based commercial technologies that are relatively inexpensive and easily integrated into existing systems and processes, yet are not so unwieldy as to be unusable by smaller and more mobile units. To this end, GBS currently uses broadcast payloads on two Ultra-High Frequency Follow-On (UFO) satellites and leased commercial satellite transponders. GBS is also broadcasting over the Wideband Global SATCOM (WGS) constellation.

Theater Injection Point terminals provide a deployable Ka-band uplink capability that can operate directly from a Combatant Commander's (COCOM's) Area of Responsibility. Information sources deliver products for daily broadcast to two Satellite Broadcast Managers (SBMs) based on defined mission profiles approved by COCOM Theater Information Managers (TIMs). At the SBM, the Planning and Management application schedules broadcasts to users as well as keeps users, products, and mission profiles current.

Executive Summary

Support to the Warfighter:
The Global Broadcast Service (GBS) continues to provide critical information to the warfighter with little to no delay. News, weather, unclassified imagery, and other products were delivered from the Satellite Broadcast Managers (SBMs) to users both stationary and on the move. The GBS maintained continuous service to the USS Blue Ridge while it traveled on the very edges of satellite field of view during a Southwest Asia mission. The SBM executed precise beam pointing maneuvers and Global SATCOM Support Center (GSSC) adjusted satellite downlink power resulting in flawless coverage during the mission. USS Blue Ridge responded with "As always, thank you for your superb support. Having continuous [GBS] support was critical to the mission."

The operational value of GBS was highlighted during a 25-day exercise held by the Army in Hohenfels, Germany in October 2012. Utilizing GBS fixed and transportable broadcast capabilities, the 7th Theater Tactical Signal Brigade provided communications support to 2nd Cavalry Regiment at the Joint Multinational Readiness Center during their Decisive Action Training Environment exercise. GBS enabled commanders to have first-class access to real-time battlefield conditions by providing a 42 Megabits Per Second (Mbps) dedicated link to units in several areas of operation that are almost eight times faster than the average commercial broadband speeds offered in the United States. One commander stated the transportable broadcast capability, "…allows commanders to seize and retain the initiative by giving them the ability to see and share important battlefield information. Combatant commanders can then use this information to create advantages over the enemy."

Transportable Ground Receive Suite (TGRS):
Production contract with Raytheon - The final deliveries were made in March 2012. A total of 257 TGRSs were ordered on this contract for the Air Force, Army, Army National Guard and Marines.

Firm Fixed Price production contract with General Dynamics (GD) for a Joint Internet Protocol Modem (JIPM) capable TGRS – GD has experienced significant testing issues throughout the year. Environmental Qualification Testing (EQT) started January 5, 2012, on the Transportable Ground Receive Suite (TGRS) Qualification Units; the units failed four major parts of EQT. These failures, along with poor quality of Contract Data Requirements List (CDRL) deliverables, prompted the Procurement Contracting Officer to send a letter of concern on January 26, 2012. GD's performance improved and they closed out eight of the thirteen defects by May 2012. The remaining issues are with the antenna portion of the TGRS (a TGRS is comprised of an antenna and a collection of commercial components collectively referred to as the Receive Broadcast Manager [RBM]). EQT and First Article Test (FAT) are now scheduled to complete in May 2013 and the Qualification Units are scheduled to be delivered July 2013.

GD experienced success with the TGRS Qualification Retrofit Kits (retrofitting the legacy TGRS with JIPM capabilities). The retrofit only affects the RBM, and one requirement is that the retrofit is compatible with already-fielded antennas. Safety and Reliability testing concluded in December 2012. The program office has ordered 360 retrofit kits for the Army and 247 for the Air Force. This brings the current contract value to $18M; there is a $900M ceiling on the contract and pricing tables extend through FY 2015.

Navy Production for Ship and Sub-Surface Receive Suites:
Five receive suites on this contract executed by the Navy were delivered in January 2012. All 40 ordered have been delivered.

Portable Receive Suites (PRS):
Rucksack Portable Receive Suite (RPRS) - A delivery order to complete the RPRS production baseline was placed in March 2012. The contractor, Windmill International, will refurbish three engineering design models for testing purposes, developing training courses, and performing other system technical orders as required. Windmill completed this work on December 10, 2012.

Suitcase Portable Receive Suites (SPRS) – Initial design of the SPRS was performed by Windmill in prior years on a Small Business Innovative Research (SBIR) contract executed by the Navy. The SPRS was considered a “stepping stone” towards the RPRS development, but there are Government customers who have procured the SPRS (and the required maintenance). In February 2012, Windmill submitted a proposal to Air Force Research Laboratory (AFRL) to compete for Rapid Innovation Funds (RIF). The proposal scope was to baseline the SPRS configuration for incorporation into the GBS program of record. Windmill's proposal was accepted. The contract was awarded August 24, 2012; AFRL then turned administration of the contract over to the GBS program office.

The program office is also preparing the documentation to solicit a proposal from Windmill for RPRS and SPRS production. The solicitation will be released in January 2013 and contract award is anticipated for June 2013. The contract will contain firm fixed price pricing tables covering a period of five years.

Test Support for Operational Testing:
An Over-the-Air (OTA) test exercise to confirm the Transmission Security (TRANSEC) capability of the JIPM products and receive capabilities of GBS receive suite configurations (TGRS, RPRS and SPRS) was conducted February 21 - March 2, 2012. The OTA involved the Air Force Command, Control, Communications, Computers & Intelligence (C4I) lab, the Army C4I lab, General Dynamics, Windmill, and ViaSat, the manufacturer of the JIPM and Mini-Integrated Receiver Decoder (MIRD). The test broadcast originated from the JIPM Network Control Center (NCC) at the Joint SATCOM Engineering Center (JSEC) in Aberdeen, MD, and was sent over Wideband Global SATCOM-3 (WGS-3) to participating users. The first successful broadcast was received February 22, 2012.

The program office is also planning test events that will verify new capabilities and products. In the coming year GBS will have a new broadcast architecture (established on a separate Acquisition Category III program), address TRANSEC issues via JIPM products, and have new TGRS and PRS configurations that also incorporate TRANSEC/JIPM solutions. In response, Developmental Test (DT) and Operational Test (OT) events will be conducted by independent test organizations. DT will be conducted by the 46th Test Squadron; OT, Air Force Operational Test and Evaluation Center (AFOTEC). DT is tentatively scheduled for Q4 FY 2013; OT, Q2 FY 2014. These test events are required for GBS to receive an Authority to Operate (ATO).

Operations & Maintenance:
The GBS SBM sites exceed Operational Availability Objectives while contending with significant equipment obsolescence challenges. For the quarter ending September 30, 2012 Broadcast Availability achieved 99.4% against an objective of 99%; Mean Down Time was less than 6.7 hours against an objective of less than or equal to 8 hours.

GBS operations and sustainment completed major server hardware and software operating system upgrades to resolve an Information Assurance (IA) category II (CAT II) control discrepancy against the Designated Approving Authority (DAA) ATO for both the GBS SBM Norfolk, VA and Wahiawa, HI sites. The upgrades addressed the immediate obsolescence and supportability issues, and assured secure and enhanced SBM operations until the transition to the new broadcast architecture.

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

Threshold Breaches

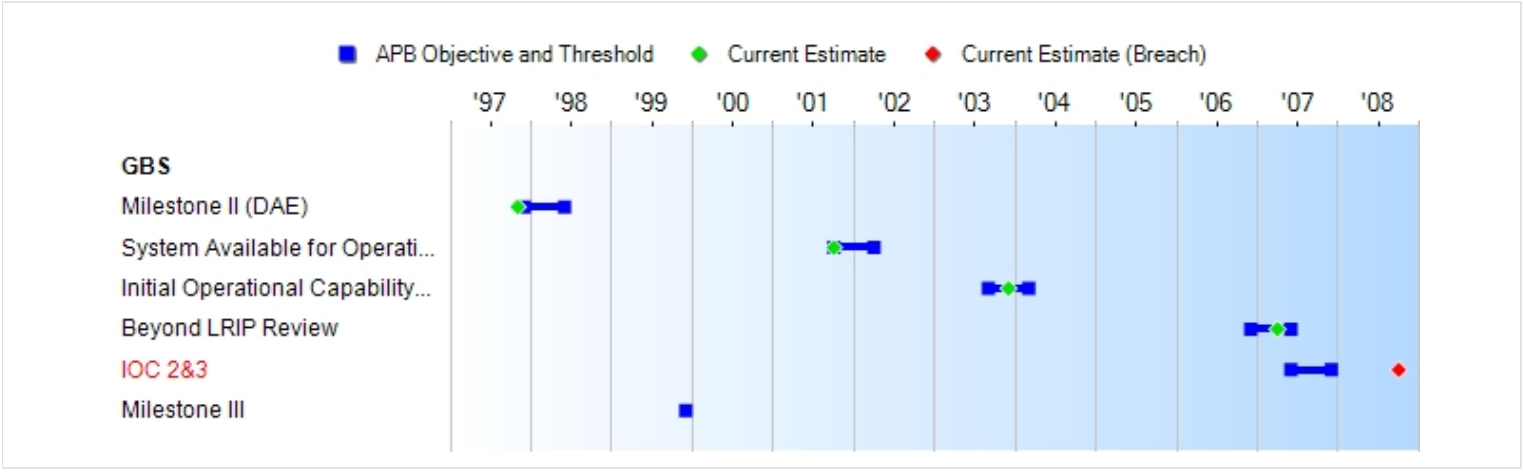
APB Breaches		
Schedule		☑
Performance		☐
Cost	RDT&E	☐
	Procurement	☑
	MILCON	☐
	Acq O&M	☐
O&S Cost		☐
Unit Cost	PAUC	☐
	APUC	☐

Nunn-McCurdy Breaches		
Current UCR Baseline		
	PAUC	None
	APUC	None
Original UCR Baseline		
	PAUC	None
	APUC	None

Explanation of Breach

The schedule and the total procurement cost breaches shown here were reported in the December 2010 SAR.

Schedule



Milestones	SAR Baseline Dev Est	Current APB Development Objective/Threshold		Current Estimate
Milestone II (DAE)	DEC 1997	DEC 1997	JUN 1998	NOV 1997
System Available for Operational Use	JUN 1999	OCT 2001	APR 2002	OCT 2001
Initial Operational Capability (IOC)	DEC 1999	SEP 2003	MAR 2004	DEC 2003
Beyond LRIP Review	N/A	DEC 2006	JUN 2007	APR 2007
IOC 2&3	N/A	JUN 2007	DEC 2007	**OCT 2008**[1]
Milestone III	DEC 1999	N/A	N/A	N/A

[1] *APB Breach*

Acronyms And Abbreviations

DAE - Defense Acquisition Executive
LRIP - Low Rate Initial Production

Change Explanations

None

Memo

An incremental IOC approach was approved by the Joint Requirements Oversight Council (JROC) memo 111-00, dated June 27, 2000. GBS Phase II requirements are grouped into IOC 1, 2 and 3. The following summarizes the threshold requirements associated with each IOC:

IOC 1:
- Primary Injection Point (PIPs) operational on Ultra High Frequency Follow-On (UFO) satellites 8, 9, 10.
- Full Satellite Broadcast Manager capability.

- Field 20% of Joint Program Office (JPO) Receive Suites (19 units).
- Personnel training in operations and maintenance of fielded equipment.
- Logistically support the system to effectively sustain GBS.
- Independently assess system capabilities.
- Augment UFO GBS with leased commercial satellite services to cover gaps over continental United States (CONUS).
- Demonstrate smart push and user pull capability

(Note: IOC 1 is based on the performance of the currently fielded Asynchronous Transfer Mode (ATM) based system.)

IOC 2:

- Field 90% of JPO Receive Suites (86 units).
- Provide classified video capability.
- Remote Receive Suite enable/disable.

IOC 3:

- Tactically suitable Ground Receive Suite (two-person lift).
- Protect all information from exploitation.

Performance

Characteristics	SAR Baseline Dev Est	Current APB Development Objective/Threshold		Demonstrated Performance	Current Estimate	
System Coverage	65 deg South to 65 deg North	65 deg South to 65 deg North	65 deg South to 65 deg North	65 deg South to 65 deg North	65 deg South to 65 deg North	
Space Segment Resources	N/A	WGS with UFO GBS	WGS with UFO GBS	WGS with UFO GBS	WGS with UFO GBS	
Spot Beams	Two 500nm steerable, one 2000 nm steerable	Two 500nm steerable, one 2000 nm steerable	Two 500nm steerable, One 2000 nm steerable	Two 500nm steerable, One 2000 nm steerable	Two 500nm steerable, One 2000 nm steerable	
Simultaneous Uplinks	One PIP and up to 3 TIPs simultan-eously	One PIP and up to 3 TIPs simultan-eously	One PIP and one TIP	One PIP and one TIP	One PIP and one TIP	
Security	Pass unclassified to TS/SCI traffic	Pass unclassified toTS/SCI traffic	Pass unclassified toTS/SCI traffic	Pass unclassified to TS/SCI traffic	Pass unclassified toTS/SCI traffic	
Receive Frequency Band	20.2-21. 2 GHz UFO GBS, one or more commercial satellite frequency bands	N/A	N/A	N/A	N/A	
Support operations with multiple satellite beams and terminal types (i.e., Receive Variable Data Rates)	2000nm: add SSRS and ART 500nm: add ART	2000nm: add SSRS and ART 500nm: Add ART	2000nm: FGRS, TGRS and SRS 500nm: FGRS, TGRS, SRS and SSRS	2000nm: FGRS, TGRS and SRS 500nm: FGRS, TGRS, SRS and SSRS	2000nm: FGRS, TGRS and SRS 500nm: FGRS, TGRS, SRS and SSRS	(Ch-1)
Pointing of Steerable Spot Beam Antenna	Frequent	Frequent	Frequent	Frequent	Frequent	
Steerable Antenna Tasking	SBM Primary means	SBM Primary Means	SBM Primary Means	SBM Primary Means	SBM Primary Means	
Interoperability	N/A	100% IERs satisfied	100% critical IERs	100% IERs satisfied	100% IERs satisfied	

			satisfied			
Network Ready	N/A	TBD	TBD	TBD	JIPM-enabled TGRS to be fielded beginning FY 2014	(Ch-2)

Requirements Source: Operational Requirements Document (ORD) dated January 12, 2005

Acronyms And Abbreviations

ART - Airborne Receive Terminal
deg - Degrees
FGRS - Fixed Ground Receive Suite/Terminal
GHz - Gigahertz
IERs - Information Exchange Requirements
JIPM - Joint Integrated Protocol Modem
N/A - Not Applicable
nm - Nautical Miles
PIP - Primary Injection Point
SBM - Satellite Broadcast Manager
SRS - Shipboard Receive Suite/Terminal
SSRS - SubSurface (submarine) Receive Suite/Terminal
TBD - To Be Determined
TGRS - Transportable Ground Receive Suite/Terminal
TIP - Theater Injection Point
TS/SCI - Top Secret/Sensitive Compartmented Information
UFO - UHF Follow-on Satellite
WGS - Wideband Global Satellite

Change Explanations

(Ch-1) The acronyms and abreviations were corrected for Support Operations to match the current program vernacular.

(Ch-2) The current estimate for Network Ready JIPM fielding was updated from FY 2013 to FY 2014 to coincide with the current program schedule.

Track To Budget

RDT&E				
APPN 3600	BA 07	PE 0303601F	(Air Force)	
	Project 2487	MILSATCOM Space	(Shared)	(Sunk)
APPN 3600	BA 05	PE 0603840F	(Air Force)	
	Project 4887	Global Broadcast Service	(Shared)	(Sunk)
APPN 3600	BA 04	PE 0603854F	(Air Force)	
	Project 2679	Global Broadcast Service 1 & 2		(Sunk)
APPN 3600	BA 04	PE 0604775F	(Air Force)	
	Project 6004	Defense Rapid Innovation Program	(Shared)	(Sunk)

Program Received $1.4M in FY 2011 APPN 3600 from PE 0604775F to baseline the Suitcase Portable Receive Suite configuration.

Procurement				
APPN 1109	BA 04	PE 0206313M	(Navy)	
	ICN 463300	Radio Systems	(Shared)	
APPN 1810	BA 02	PE 0303109N	(Navy)	
	ICN 321500	Satellite Communications Systems	(Shared)	
APPN 2035	BA 02	PE 0310703A	(Army)	
	ICN BC4120	GBS	(Shared)	
APPN 3080	BA 03	PE 0303601F	(Air Force)	
	ICN 836780	MILSATCOM Space	(Shared)	(Sunk)

APPN 0350	BA 02	PE 0505001D	(DoD)	
	ICN 21005	Misc Equipment - Army National Guard	(Shared)	(Sunk)

Cost and Funding

Cost Summary

Total Acquisition Cost and Quantity

Appropriation	BY1997 $M SAR Baseline Dev Est	BY1997 $M Current APB Development Objective/Threshold		BY1997 $M Current Estimate	TY $M SAR Baseline Dev Est	TY $M Current APB Development Objective	TY $M Current Estimate
RDT&E	397.5	423.5	465.9	396.8	439.2	450.5	419.7
Procurement	53.9	361.3	397.4	**554.0** [1]	57.9	412.3	687.4
Flyaway	48.5	--	--	528.7	52.1	--	657.0
Recurring	48.5	--	--	372.0	52.1	--	457.9
Non Recurring	0.0	--	--	156.7	0.0	--	199.1
Support	5.4	--	--	25.3	5.8	--	30.4
Other Support	4.3	--	--	6.1	4.7	--	6.6
Initial Spares	1.1	--	--	19.2	1.1	--	23.8
MILCON	0.0	0.0	--	0.0	0.0	0.0	0.0
Acq O&M	0.0	0.0	--	0.0	0.0	0.0	0.0
Total	451.4	784.8	N/A	950.8	497.1	862.8	1107.1

[1] ***APB Breach***

Quantity	SAR Baseline Dev Est	Current APB Development	Current Estimate
RDT&E	221	136	136
Procurement	125	1085	1790
Total	346	1221	1926

The Research, Development, Test & Evaluation quantity of 136 is comprised of 10 First Generation Increment One (I1E) Air Force Receive Suites (RS), 27 I1E Shipboard RS, 96 Joint Program Office funded Air Force RS, and three Primary Injection Points (PIPs).

The Procurement quantity includes three Army Theater Injection Points (TIPs) and two Air Force TIPs; all others are RS.

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	419.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	419.7
Procurement	523.2	73.0	32.3	25.8	24.5	6.8	1.8	0.0	687.4
MILCON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2014 Total	942.9	73.0	32.3	25.8	24.5	6.8	1.8	0.0	1107.1
PB 2013 Total	931.1	50.8	44.6	17.6	24.5	1.7	0.0	0.0	1070.3
Delta	11.8	22.2	-12.3	8.2	0.0	5.1	1.8	0.0	36.8

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	136	0	0	0	0	0	0	0	0	136
Production	0	1614	106	10	21	21	11	7	0	1790
PB 2014 Total	136	1614	106	10	21	21	11	7	0	1926
PB 2013 Total	136	1475	94	169	15	23	4	0	0	1916
Delta	0	139	12	-159	6	-2	7	7	0	10

Cost and Funding

Annual Funding By Appropriation

Annual Funding TY$
3600 | RDT&E | Research, Development, Test, and Evaluation, Air Force

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
1996	--	--	--	--	--	--	14.0
1997	--	--	--	--	--	--	37.9
1998	--	--	--	--	--	--	70.2
1999	--	--	--	--	--	--	64.3
2000	--	--	--	--	--	--	41.1
2001	--	--	--	--	--	--	31.6
2002	--	--	--	--	--	--	34.0
2003	--	--	--	--	--	--	20.8
2004	--	--	--	--	--	--	35.8
2005	--	--	--	--	--	--	21.8
2006	--	--	--	--	--	--	17.9
2007	--	--	--	--	--	--	23.1
2008	--	--	--	--	--	--	0.5
2009	--	--	--	--	--	--	--
2010	--	--	--	--	--	--	1.8
2011	--	--	--	--	--	--	4.9
Subtotal	**136**	**--**	**--**	**--**	**--**	**--**	**419.7**

Annual Funding BY$
3600 | RDT&E | Research, Development, Test, and Evaluation, Air Force

Fiscal Year	Quantity	End Item Recurring Flyaway BY 1997 $M	Non End Item Recurring Flyaway BY 1997 $M	Non Recurring Flyaway BY 1997 $M	Total Flyaway BY 1997 $M	Total Support BY 1997 $M	Total Program BY 1997 $M
1996	--	--	--	--	--	--	14.1
1997	--	--	--	--	--	--	37.7
1998	--	--	--	--	--	--	69.4
1999	--	--	--	--	--	--	62.9
2000	--	--	--	--	--	--	39.6
2001	--	--	--	--	--	--	30.0
2002	--	--	--	--	--	--	32.0
2003	--	--	--	--	--	--	19.3
2004	--	--	--	--	--	--	32.4
2005	--	--	--	--	--	--	19.2
2006	--	--	--	--	--	--	15.3
2007	--	--	--	--	--	--	19.3
2008	--	--	--	--	--	--	0.4
2009	--	--	--	--	--	--	--
2010	--	--	--	--	--	--	1.4
2011	--	--	--	--	--	--	3.8
Subtotal	**136**	**--**	**--**	**--**	**--**	**--**	**396.8**

The Research, Development, Test, & Evaluation funds starting in FY 2010 are associated with terminal (receive suite) functionality. Of the $6.7M TY$s, $5.3M is sourced from PE 0303601F and $1.4M is sourced from PE 0604775F. The funds are associated with portable receive suite development.

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
2004	--	--	--	2.4	2.4	--	2.4
2005	48	5.7	--	--	5.7	--	5.7
2006	20	3.1	--	3.4	6.5	--	6.5
2007	--	--	--	0.1	0.1	--	0.1
2008	--	--	--	2.4	2.4	--	2.4
2009	--	--	--	0.7	0.7	--	0.7
2010	16	2.4	--	--	2.4	--	2.4
2011	13	2.4	--	--	2.4	0.6	3.0
2012	18	3.6	1.0	0.2	4.8	--	4.8
2013	--	--	--	1.5	1.5	--	1.5
2014	--	--	--	1.6	1.6	--	1.6
2015	--	--	--	1.6	1.6	--	1.6
2016	--	--	--	1.6	1.6	--	1.6
Subtotal	**115**	**17.2**	**1.0**	**15.5**	**33.7**	**0.6**	**34.3**

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

Fiscal Year	Quantity	End Item Recurring Flyaway BY 1997 $M	Non End Item Recurring Flyaway BY 1997 $M	Non Recurring Flyaway BY 1997 $M	Total Flyaway BY 1997 $M	Total Support BY 1997 $M	Total Program BY 1997 $M
2004	--	--	--	2.1	2.1	--	2.1
2005	48	4.9	--	--	4.9	--	4.9
2006	20	2.6	--	2.8	5.4	--	5.4
2007	--	--	--	0.1	0.1	--	0.1
2008	--	--	--	1.9	1.9	--	1.9
2009	--	--	--	0.6	0.6	--	0.6
2010	16	1.9	--	--	1.9	--	1.9
2011	13	1.8	--	--	1.8	0.5	2.3
2012	18	2.7	0.7	0.2	3.6	--	3.6
2013	--	--	--	1.1	1.1	--	1.1
2014	--	--	--	1.2	1.2	--	1.2
2015	--	--	--	1.1	1.1	--	1.1
2016	--	--	--	1.1	1.1	--	1.1
Subtotal	**115**	**13.9**	**0.7**	**12.2**	**26.8**	**0.5**	**27.3**

Annual Funding TY$
2035 | Procurement | Other Procurement, Army

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
1998	1	3.0	--	2.2	5.2	2.1	7.3
1999	8	4.3	--	--	4.3	1.5	5.8
2000	17	9.4	--	4.0	13.4	1.5	14.9
2001	--	--	--	--	--	0.2	0.2
2002	27	7.6	--	--	7.6	0.8	8.4
2003	13	4.9	--	--	4.9	1.0	5.9
2004	24	13.6	--	0.3	13.9	0.1	14.0
2005	1	12.2	--	--	12.2	1.2	13.4
2006	59	12.1	--	--	12.1	1.0	13.1
2007	62	16.7	--	--	16.7	1.2	17.9
2008	332	46.6	--	--	46.6	3.5	50.1
2009	188	34.4	--	--	34.4	3.3	37.7
2010	4	0.5	--	6.3	6.8	--	6.8
2011	--	--	--	4.6	4.6	--	4.6
2012	177	57.3	--	7.0	64.3	0.5	64.8
2013	89	35.3	--	8.8	44.1	3.0	47.1
2014	--	--	--	28.2	28.2	--	28.2
2015	--	--	--	14.9	14.9	--	14.9
2016	--	--	--	11.1	11.1	--	11.1
Subtotal	**1002**	**257.9**	**--**	**87.4**	**345.3**	**20.9**	**366.2**

Annual Funding BY$
2035 | Procurement | Other Procurement, Army

Fiscal Year	Quantity	End Item Recurring Flyaway BY 1997 $M	Non End Item Recurring Flyaway BY 1997 $M	Non Recurring Flyaway BY 1997 $M	Total Flyaway BY 1997 $M	Total Support BY 1997 $M	Total Program BY 1997 $M
1998	1	2.9	--	2.1	5.0	2.1	7.1
1999	8	4.1	--	--	4.1	1.5	5.6
2000	17	9.0	--	3.7	12.7	1.5	14.2
2001	--	--	--	--	--	0.2	0.2
2002	27	7.1	--	--	7.1	0.7	7.8
2003	13	4.5	--	--	4.5	0.9	5.4
2004	24	12.1	--	0.3	12.4	0.1	12.5
2005	1	10.6	--	--	10.6	1.0	11.6
2006	59	10.2	--	--	10.2	0.9	11.1
2007	62	13.8	--	--	13.8	1.0	14.8
2008	332	37.8	--	--	37.8	2.8	40.6
2009	188	27.5	--	--	27.5	2.7	30.2
2010	4	0.4	--	4.9	5.3	--	5.3
2011	--	--	--	3.5	3.5	--	3.5
2012	177	43.3	--	5.2	48.5	0.4	48.9
2013	89	25.9	--	6.5	32.4	2.2	34.6
2014	--	--	--	20.3	20.3	--	20.3
2015	--	--	--	10.5	10.5	--	10.5
2016	--	--	--	7.7	7.7	--	7.7
Subtotal	**1002**	**209.2**	**--**	**64.7**	**273.9**	**18.0**	**291.9**

Annual Funding TY$
3080 | Procurement | Other Procurement, Air Force

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
2000	5	2.9	--	--	2.9	--	2.9
2001	16	4.5	--	--	4.5	--	4.5
2002	28	6.7	--	--	6.7	--	6.7
2003	6	1.0	--	13.8	14.8	--	14.8
2004	88	19.1	--	--	19.1	0.1	19.2
2005	2	12.1	--	--	12.1	0.1	12.2
2006	65	13.1	--	--	13.1	0.1	13.2
2007	--	--	--	0.7	0.7	--	0.7
2008	--	--	--	1.1	1.1	--	1.1
2009	2	1.7	--	--	1.7	--	1.7
2010	10	1.4	--	4.9	6.3	0.5	6.8
2011	13	8.1	--	10.5	18.6	0.5	19.1
2012	48	6.3	--	3.0	9.3	0.5	9.8
2013	7	1.0	--	9.1	10.1	0.1	10.2
Subtotal	**290**	**77.9**	**--**	**43.1**	**121.0**	**1.9**	**122.9**

Annual Funding BY$
3080 | Procurement | Other Procurement, Air Force

Fiscal Year	Quantity	End Item Recurring Flyaway BY 1997 $M	Non End Item Recurring Flyaway BY 1997 $M	Non Recurring Flyaway BY 1997 $M	Total Flyaway BY 1997 $M	Total Support BY 1997 $M	Total Program BY 1997 $M
2000	5	2.7	--	--	2.7	--	2.7
2001	16	4.2	--	--	4.2	--	4.2
2002	28	6.1	--	--	6.1	--	6.1
2003	6	0.9	--	12.8	13.7	--	13.7
2004	88	17.3	--	--	17.3	0.1	17.4
2005	2	10.7	--	--	10.7	0.1	10.8
2006	65	11.2	--	--	11.2	0.1	11.3
2007	--	--	--	0.6	0.6	--	0.6
2008	--	--	--	0.9	0.9	--	0.9
2009	2	1.4	--	--	1.4	--	1.4
2010	10	1.1	--	3.9	5.0	0.4	5.4
2011	13	6.3	--	8.2	14.5	0.4	14.9
2012	48	4.8	--	2.3	7.1	0.4	7.5
2013	7	0.8	--	6.8	7.6	0.1	7.7
Subtotal	**290**	**67.5**	**--**	**35.5**	**103.0**	**1.6**	**104.6**

Annual Funding TY$
1810 | Procurement | Other Procurement, 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
1997	11	0.6	--	--	0.6	--	0.6
1998	--	--	--	--	--	--	--
1999	20	4.2	--	--	4.2	--	4.2
2000	8	0.8	--	--	0.8	--	0.8
2001	13	1.1	--	--	1.1	--	1.1
2002	16	2.1	--	--	2.1	--	2.1
2003	--	--	--	5.5	5.5	--	5.5
2004	--	--	--	19.3	19.3	--	19.3
2005	--	--	--	7.9	7.9	--	7.9
2006	--	--	--	2.7	2.7	--	2.7
2007	2	0.9	--	--	0.9	--	0.9
2008	1	1.8	--	--	1.8	--	1.8
2009	17	26.1	--	--	26.1	--	26.1
2010	13	6.0	--	1.0	7.0	--	7.0
2011	20	9.2	--	0.7	9.9	0.9	10.8
2012	10	2.6	--	1.5	4.1	0.4	4.5
2013	10	2.6	--	11.5	14.1	0.1	14.2
2014	10	2.2	--	--	2.2	0.3	2.5
2015	21	8.7	--	--	8.7	0.6	9.3
2016	21	8.8	--	1.0	9.8	2.0	11.8
2017	11	4.2	--	2.0	6.2	0.6	6.8
2018	7	1.7	--	--	1.7	0.1	1.8
Subtotal	**211**	**83.6**	**--**	**53.1**	**136.7**	**5.0**	**141.7**

Annual Funding BY$
1810 | Procurement | Other Procurement, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway BY 1997 $M	Non End Item Recurring Flyaway BY 1997 $M	Non Recurring Flyaway BY 1997 $M	Total Flyaway BY 1997 $M	Total Support BY 1997 $M	Total Program BY 1997 $M
1997	11	0.6	--	--	0.6	--	0.6
1998	--	--	--	--	--	--	--
1999	20	4.1	--	--	4.1	--	4.1
2000	8	0.8	--	--	0.8	--	0.8
2001	13	1.0	--	--	1.0	--	1.0
2002	16	2.0	--	--	2.0	--	2.0
2003	--	--	--	5.0	5.0	--	5.0
2004	--	--	--	17.2	17.2	--	17.2
2005	--	--	--	6.8	6.8	--	6.8
2006	--	--	--	2.3	2.3	--	2.3
2007	2	0.7	--	--	0.7	--	0.7
2008	1	1.5	--	--	1.5	--	1.5
2009	17	20.8	--	--	20.8	--	20.8
2010	13	4.7	--	0.8	5.5	--	5.5
2011	20	7.1	--	0.5	7.6	0.7	8.3
2012	10	2.0	--	1.1	3.1	0.3	3.4
2013	10	1.9	--	8.5	10.4	0.1	10.5
2014	10	1.6	--	--	1.6	0.2	1.8
2015	21	6.2	--	--	6.2	0.4	6.6
2016	21	6.1	--	0.7	6.8	1.4	8.2
2017	11	2.9	--	1.4	4.3	0.4	4.7
2018	7	1.1	--	--	1.1	0.1	1.2
Subtotal	**211**	**65.1**	**--**	**44.3**	**109.4**	**3.6**	**113.0**

Annual Funding TY$
0350 | Procurement | National Guard and Reserve Equipment ,Defense

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
2011	172	20.3	--	--	20.3	2.0	22.3
Subtotal	**172**	**20.3**	**--**	**--**	**20.3**	**2.0**	**22.3**

Annual Funding BY$
0350 | Procurement | National Guard and Reserve Equipment ,Defense

Fiscal Year	Quantity	End Item Recurring Flyaway BY 1997 $M	Non End Item Recurring Flyaway BY 1997 $M	Non Recurring Flyaway BY 1997 $M	Total Flyaway BY 1997 $M	Total Support BY 1997 $M	Total Program BY 1997 $M
2011	172	15.6	--	--	15.6	1.6	17.2
Subtotal	**172**	**15.6**	**--**	**--**	**15.6**	**1.6**	**17.2**

Low Rate Initial Production

	Initial LRIP Decision	Current Total LRIP
Approval Date	11/14/1997	6/21/2006
Approved Quantity	500	628
Reference	Milestone II ADM	ADM
Start Year	1997	1997
End Year	1999	2007

The Current Total LRIP Quantity is more than 10% of the total production quantity due to the following:

Acquisition Decision Memorandum (ADM), November 1997, approved the GBS Phase II entry into Engineering and Manufacturing Development and a Low Rate Initial Production (LRIP) of up to 500 Receive Suites (RS) and 140 shipboard antennas.

The Under Secretary of Defense for Acquisition, Technology, and Logistics (USD(AT&L)) Memorandum (June 2006) authorized an LRIP increase of 128 RS to an approved quantity of 628 RS. This exceeds the 10% threshold.

On April 13, 2007, the USD(AT&L) signed an ADM that authorized the Joint Program Office (JPO) to procure Beyond Low-Rate Initial Production (BLRIP) quantities of RS.

Foreign Military Sales

None

Nuclear Cost

None

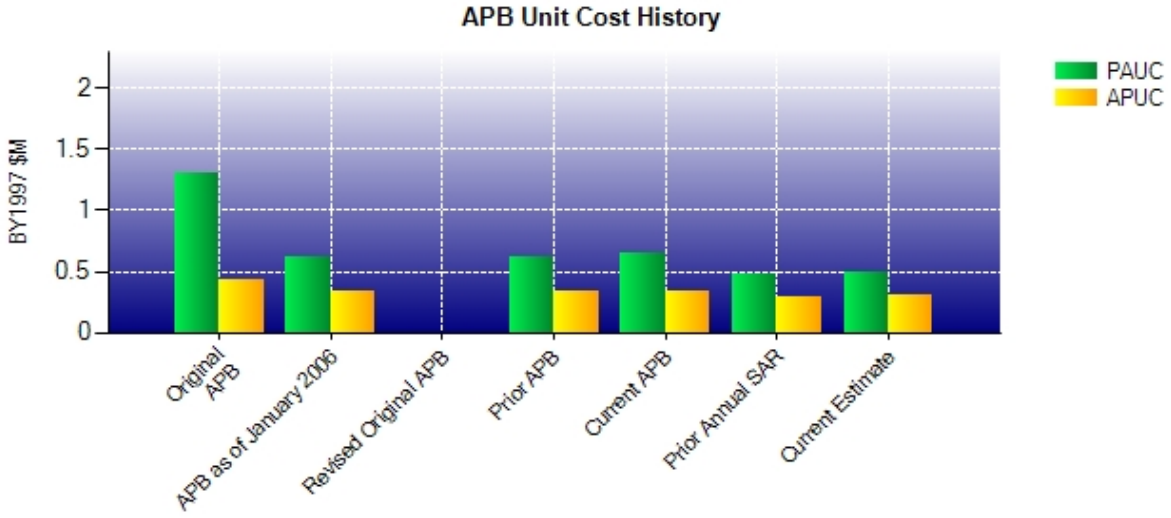
Unit Cost

Unit Cost Report

Unit Cost	BY1997 $M Current UCR Baseline (SEP 2006 APB)	BY1997 $M Current Estimate (DEC 2012 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	784.8	950.8	
Quantity	1221	1926	
Unit Cost	0.643	0.494	-23.17
Average Procurement Unit Cost (APUC)			
Cost	361.3	554.0	
Quantity	1085	1790	
Unit Cost	0.333	0.309	-7.21

Unit Cost	BY1997 $M Original UCR Baseline (NOV 1997 APB)	BY1997 $M Current Estimate (DEC 2012 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	451.4	950.8	
Quantity	346	1926	
Unit Cost	1.305	0.494	-62.15
Average Procurement Unit Cost (APUC)			
Cost	53.9	554.0	
Quantity	125	1790	
Unit Cost	0.431	0.309	-28.31

Unit Cost History



		BY1997 $M		TY $M	
	Date	PAUC	APUC	PAUC	APUC
Original APB	NOV 1997	1.305	0.431	1.437	0.463
APB as of January 2006	FEB 2003	0.614	0.333	0.673	0.380
Revised Original APB	N/A	N/A	N/A	N/A	N/A
Prior APB	FEB 2003	0.614	0.333	0.673	0.380
Current APB	SEP 2006	0.643	0.333	0.707	0.380
Prior Annual SAR	DEC 2011	0.483	0.297	0.559	0.366
Current Estimate	DEC 2012	0.494	0.309	0.575	0.384

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	
1.437	-0.003	-0.954	0.040	0.075	-0.033	0.000	0.013	-0.862	0.575

Current SAR Baseline to Current Estimate (TY $M)

Initial APUC Dev Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.463	0.005	-0.188	0.043	0.044	0.003	0.000	0.014	-0.079	0.384

SAR Baseline History

Item/Event	SAR Planning Estimate (PE)	SAR Development Estimate (DE)	SAR Production Estimate (PdE)	Current Estimate
Milestone I	N/A	N/A	N/A	N/A
Milestone II	N/A	DEC 1997	N/A	NOV 1997
Milestone III	N/A	DEC 1999	N/A	N/A
IOC	N/A	DEC 1999	N/A	DEC 2003
Total Cost (TY $M)	N/A	497.1	N/A	1107.1
Total Quantity	N/A	346	N/A	1926
Prog. Acq. Unit Cost (PAUC)	N/A	1.437	N/A	0.575

Cost Variance

Summary Then Year $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Dev Est)	439.2	57.9	--	497.1
Previous Changes				
Economic	-14.5	+6.5	--	-8.0
Quantity	-2.7	+384.0	--	+381.3
Schedule	--	+122.7	--	+122.7
Engineering	+65.6	+123.8	--	+189.4
Estimating	-69.3	-69.5	--	-138.8
Other	--	--	--	--
Support	--	+26.6	--	+26.6
Subtotal	-20.9	+594.1	--	+573.2
Current Changes				
Economic	--	+2.9	--	+2.9
Quantity	--	+51.4	--	+51.4
Schedule	--	-45.8	--	-45.8
Engineering	--	-45.9	--	-45.9
Estimating	+1.4	+74.7	--	+76.1
Other	--	--	--	--
Support	--	-1.9	--	-1.9
Subtotal	+1.4	+35.4	--	+36.8
Total Changes	-19.5	+629.5	--	+610.0
CE - Cost Variance	419.7	687.4	--	1107.1
CE - Cost & Funding	419.7	687.4	--	1107.1

Summary Base Year 1997 $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Dev Est)	397.5	53.9	--	451.4
Previous Changes				
Economic	--	--	--	--
Quantity	-2.6	+321.5	--	+318.9
Schedule	--	+94.6	--	+94.6
Engineering	+57.0	+96.4	--	+153.4
Estimating	-56.2	-57.9	--	-114.1
Other	--	--	--	--
Support	--	+20.9	--	+20.9
Subtotal	-1.8	+475.5	--	+473.7
Current Changes				
Economic	--	--	--	--
Quantity	--	+40.1	--	+40.1
Schedule	--	-33.9	--	-33.9
Engineering	--	-34.2	--	-34.2
Estimating	+1.1	+53.6	--	+54.7
Other	--	--	--	--
Support	--	-1.0	--	-1.0
Subtotal	+1.1	+24.6	--	+25.7
Total Changes	-0.7	+500.1	--	+499.4
CE - Cost Variance	396.8	554.0	--	950.8
CE - Cost & Funding	396.8	554.0	--	950.8

Previous Estimate: December 2011

RDT&E	$M	
Current Change Explanations	**Base Year**	**Then Year**
Rapid Innovation Funds received for Suitcase Portable Receive Suite effort (Estimating)	+1.1	+1.4
RDT&E Subtotal	+1.1	+1.4

Procurement	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+2.9
Quantity variance resulting from an increase of 7 receive suites from 283 to 290 (Air Force). (Quantity) (QR)	+1.7	+2.3
Additional quantity variance associated with the increase of 7 receive suites (Air Force) (Quantity) (QR)	+0.9	+1.0
Total Quantity variance resulting from a decrease of 160 receive suites (Army). (Subtotal)	-38.6	-53.7
Quantity variance resulting from a decrease of 160 receive suites from 1162 to 1002 (Army). (Quantity) (QR)	(-16.1)	(-22.4)
Allocation to Schedule resulting from Quantity change. (Schedule) (QR)	(-15.6)	(-21.7)
Allocation to Engineering resulting from Quantity change. (Engineering) (QR)	(-15.7)	(-21.9)
Allocation to Estimating resulting from Quantity change. (Estimating) (QR)	(+8.8)	(+12.3)
Quantity variance resulting from an increase of 31 receive suites from 180 to 211 (Navy). (Quantity) (QR)	+7.4	+10.7
Additional quantity variance associated with the increase of 31 receive suites (Navy) (Quantity) (QR)	+4.2	+5.3
Quantity variance resulting from an increase of 132 receive suites from 40 to 172 (DoD Appn 0350) and correction of appropriaton (from Appn 0300 to Appn 0350). (Subtotal)	+13.3	+17.3
Quantity variance resulting from an increase of 132 receive suites (DoD). (Quantity) (QR)	(+39.7)	(+51.5)
Allocation to Schedule resulting from Quantity change. (Schedule) (QR)	(-18.3)	(-23.7)
Allocation to Engineering resulting from Quantity change. (Engineering) (QR)	(-18.5)	(-24.0)
Allocation to Estimating resulting from Quantity change. (Estimating) (QR)	(+10.4)	(+13.5)
Additional quantity variance associated with the increase of 132 receive suites (DoD). (Quantity) (QR)	+2.3	+3.0
Acceleration of procurement buy profile (Navy). (Schedule)	0.0	-0.4
Adjustment for current and prior escalation. (Estimating)	-1.2	-1.2
Adjustment in appropriation funding for Marines in FY 2014 (Estimating)	-0.1	-0.1
Funds Development and Operational Test events. (Estimating)	+4.9	+6.5
Upgrades to previously fielded receive suites and Theatre Injection Points (Army) (Estimating)	+34.3	+48.3
Correction in appropriation from Appn 0300 to Appn 0350 (Estimating)	-3.5	-4.6
Adjustment for current and prior escalation. (Support)	+0.1	-0.2

Increase in Initial Spares associated with the increase of 7 receive suites (Air Force). (Support) (QR)	+0.5	+0.6
Decrease in Initial Spares resulting from quantitiy decrease of 160 receive suites (Army). (Support)	-2.2	-3.1
Decrease in Other Support in FY 2014 and FY 2016 (Navy). (Support)	-0.3	-0.5
Reassessment of Initial Spares requirement (Navy). (Support)	-0.3	-0.3
Correction of appropiation for initial spares funding (from DoD Appn 0300 to DoD Appn 0350). (Support)	-0.4	-0.4
Increase in Initial Spares associated with the related to quantity increase of 132 receive suites and correction of appropriation (from DoD Appn 0300 to DoD Appn 0350). (Support)	+1.6	+2.0
Procurement Subtotal	+24.6	+35.4

(QR) Quantity Related

Contracts

General Contract Memo

There are currently no active contracts over $40 million. The Transportable Ground Receive Suite Production contract, awarded to General Dynamics on August 22, 2011, has a current value of $18.0M and has a $900M ceiling. The contract includes pre-negotiated pricing tables that extend through FY 2015.

Deliveries and Expenditures

Deliveries To Date	Plan To Date	Actual To Date	Total Quantity	Percent Delivered
Development	136	136	136	100.00%
Production	1361	1341	1790	74.92%
Total Program Quantities Delivered	1497	1477	1926	76.69%

Expenditures and Appropriations (TY $M)			
Total Acquisition Cost	1107.1	Years Appropriated	18
Expenditures To Date	871.6	Percent Years Appropriated	78.26%
Percent Expended	78.73%	Appropriated to Date	1015.9
Total Funding Years	23	Percent Appropriated	91.76%

The above data is current as of 3/30/2012.

Operating and Support Cost

GBS

Assumptions and Ground Rules

Cost Estimate Reference:

The Acquisition Program Baseline (APB) dates from February 2003 (APB Change 1). The Operating & Support (O&S) costs estimate remained unchaged when the APB was revised in September 2006 (the current APB). The O&S current estimate was prepared by the program office in March 2010 and includes all costs for operating, maintaining, and supporting the GBS assets for an assumed life of 10 years (2010-2019).

In May 2009, efforts began to transfer broadcast capabilities from the current Satellite Broadcast Manager (SBM) locations to the Defense Enterprise Computing Centers (DECC). This change in architecture was considered in this 2010 estimate which assumed simultaneous support of facilities for a full year, after which the legacy SBM will be decommissioned.

Sustainment Strategy:

Assets include: Transmit Suites (TS), Receive Suites (RS), and Theater Injection Points (TIP). The costs include all Depot Level Repairables (DLR) costs for GBS assets as well as the operating, logistics and personnel support costs associated with operating the transmit sites.

The O&S cost estimate assumed quantities of two Satellite Broadcast Managers (SBM), two Primary Injection Points (PIP), five Theater Injection Points (TIP) (two Air Force, three Army), and a total of 2,186 Receive Suites (RS) for all configurations, and for all services. Of these, 96 were procured and fielded using RDT&E funds, and 2,090 are being purchased with procurement funds. The O&S cost estimate also assumed the SBMs would be replaced by the new Defense Information Systems Agency (DISA) DECC based architecture. We assumed a period of overlap in the broadcast capabilities, then the old SBMs would be decommissioned.

As previously stated, the serviceable life was assumed to be 10 years.

Antecedent Information:

There is no antecedent system.

Unitized O&S Costs BY1997 $M		
Cost Element	**GBS Avg Annual Cost Total System**	**Antecedent (Antecedent) N/A**
Unit-Level Manpower	0.0	0.0
Unit Operations	16.4	0.0
Maintenance	4.8	0.0
Sustaining Support	0.6	0.0
Continuing System Improvements	1.7	0.0
Indirect Support	3.2	0.0
Other	1.7	0.0
Total	28.4	--

Unitized Cost Comments:

The costs in the table below are based on an estimate prepared by the program office in March 2010. From the estimate an average annual cost was calculated for the system by cost element. Costs include all costs for operating, maintaining and supporting the GBS assets for an assumed life of ten years (2010-2019) for all services.

Unit Operations encompasses all Petroleum, Oil and Lubricant costs for the Theater Injection Points (TIPs), transportation costs for sending defective items back to the depot, Organic DLR for the RSs, operations of the broadcast facilities, and license renewals.

Maintenance includes organic software maintenance, Primary Injection Point (PIP) hardware, and technical orders.

Sustaining Support encompasses sustaining engineering support costs for all GBS assets.

Continuing System Improvements includes engineering and other support required to address obsolence issues and other changes driven by technology.

Indirect Support includes other maintenance support.

Other includes the cost for continental United States (CONUS) Kurtz-under band (Ku) satellite lease and Cable News Network (CNN) Broadcast.

	Total O&S Cost $M			
	Current Development APB Objective/Threshold		Current Estimate	
	GBS		GBS	Antecedent (Antecedent)
Base Year	308.1	338.9	284.2	N/A
Then Year	382.5	N/A	386.8	N/A

Total O&S Costs Comments:

The current APB dates from February 2003. The APB O&S estimate assumed O&S through FY 2015. The latest OSD inflation indices used for the current estimate indicate a higher rate of inflation that those used for the APB. The current estimate assumes O&S through FY 2019 but also assumes a lower annual cost than the APB. These factors explain the seemingly discongruence between BY$ and TY$ for the O&S costs.

Disposal Costs

Disposal costs are excluded from the Operating and Support Cost, because the end of life has not been determined for GBS. A portion of the legacy system will become obsolete in FY 2014; disposal costs of $538K are projected for this effort.