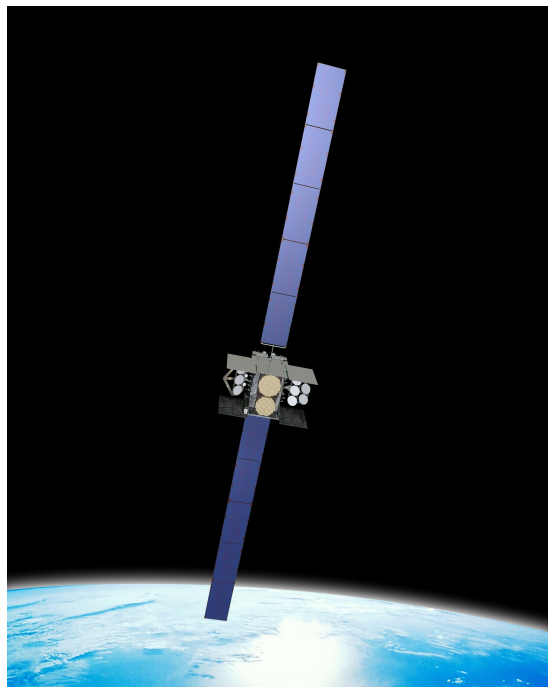




## Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-326



### Wideband Global SATCOM (WGS)

As of FY 2011 President's Budget

Defense Acquisition Management  
Information Retrieval  
(DAMIR)

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## Common Acronyms and Abbreviations for MDAP Programs

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

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

## Program Information

**Program Name**

Wideband Global SATCOM (WGS) (WGS)

**DoD Component**

AirForce

## Responsible Office

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**DSN Phone:** 633-9006  
**DSN Fax:** 633-9636  
**Date Assigned:** June 19, 2008

## References

**SAR Baseline (Development Estimate)**

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated December 15, 2000

**Approved APB**

DAE Approved Acquisition Program Baseline (APB) dated April 3, 2007

## Mission and Description

Wideband Global SATCOM (WGS), previously reported as Wideband Gapfiller Satellites, will augment the Defense Satellite Communications System III (DSCS III), and the Global Broadcast Service Phase II. WGS is a fully duplexed communications platform offering warfighters a significant increase in capacity, connectivity, and interoperability. It will provide high capacity and digitally channelized service at both X and Ka frequency bands, opening up a new 2-way Ka communication capability. This highly flexible communications satellite design leverages commercial processes, practices and technology to provide a wideband payload compatible with existing and future terminals.

## Executive Summary

WGS-1 was accepted by the government on January 18, 2008 with handover to the Combatant Commander on April 14, 2008. WGS-1 is currently in operations over the Pacific Command (PACOM) Area of Responsibility (AOR). On January 26, 2009, AFSPC/A3 signed the WGS Initial Operational Capability (IOC) Declaration Memorandum.

WGS-2 launched on April 3, 2009 and was accepted by the government on June 15, 2009 and handed over to the Combatant Commander in August 2009. It is now in operations over the Central Command (CENTCOM) AOR.

WGS-3 launched on December 5, 2009. Boeing testing is to begin in early February 2010, government acceptance is scheduled for late February 2010, and handover to the Combatant Commander [African Command (AFRICOM) and European Command (EUCOM) AORs] in April 2010.

Two Wideband Satellite Operations Centers (WSOC), Camp Roberts, CA and Fort Buckner, Japan, were accepted for operations in March 2008. The final three WSOCs, Fort Detrick, MD, Fort Meade, MD and Landstuhl, Germany, were accepted in July 2009.

Production on the Block II contract (WGS 4-6) continues. Assembly, Integration, Test for WGS-4 began in September 2009 with the Payload and Platform being mated on December 16, 2009. Production is ongoing with the propulsion module completed and the transponder built, tested and ready for integration.

The WGS-6 Production contract option was exercised on December 19, 2008 and the WGS-6 Integrated Baseline Review (IBR) was completed on June 1, 2009. WGS-6 funding is not reported in this SAR because funding is provided by Australia. The program has held four Project Status Reviews (PSRs) and two general-officer level Steering Committee meetings since the Memorandum of Understanding (MOU) was signed. The next PSR meeting will be held in February 2010.

The addition of WGS satellites 7-8 in the FY 2011 President's Budget, after a two-year production break, results in increases to the Average Procurement Unit Cost (APUC) and Program Acquisition Unit Cost (PAUC). The Secretary of the Air Force, in a letter dated March 8, 2010, notified Congress of a Nunn-McCurdy breach stating the addition of WGS 7-8 results in APUC growth over the current baseline of greater than the 25 percent Critical Cost Growth threshold. The addition also caused APUC growth over the original baseline and PAUC growth over the current baseline to exceed significant unit cost thresholds.

The WGS Block II Follow-on acquisition strategy for WGS 7-12 has been approved by the SECAF and USD (AT&L). Once OSD completes an Independent Cost Estimate and that estimate is reconciled with the Service Cost Position, the Space and Missile Systems Center will submit an updated Acquisition Program Baseline for OSD review and approval.

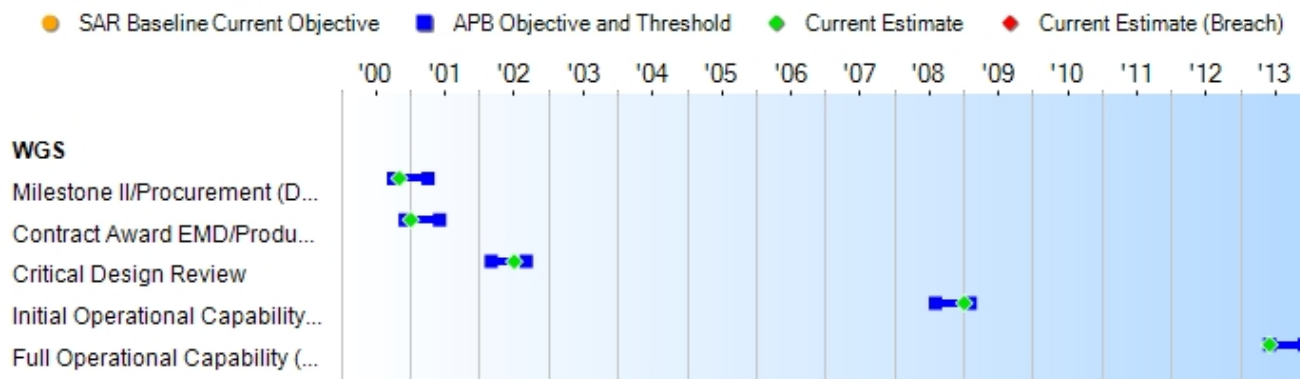
There are no significant software issues with this program at this time.

## Threshold Breaches

APB Breaches		Explanation of Breach	
<b>Schedule</b>	<input type="checkbox"/>	Program management and control on the WGS Block II program (WGS 4-6) are driving excellent program performance. Cost performance for Block II is within three percent of target. The addition of WGS satellites 7-8 in the FY 2011 President's Budget, after a two-year production break, results in increases to the Average Procurement Unit Cost (APUC) and Program Acquisition Unit Cost (PAUC). The Secretary of the Air Force, in a letter dated March 8, 2010, notified Congress of a Nunn-McCurdy breach stating the addition of WGS 7-8 results in APUC growth over the current baseline of greater than the 25 percent Critical Cost Growth threshold. The addition also caused APUC growth over the original baseline and PAUC growth over the current baseline to exceed significant unit cost thresholds.	
<b>Performance</b>	<input type="checkbox"/>		
<b>Cost</b>	RDT&E		<input type="checkbox"/>
	Procurement		<input checked="" type="checkbox"/>
	MILCON		<input type="checkbox"/>
	Acq O&M		<input type="checkbox"/>
<b>O&amp;S Cost</b>	<input type="checkbox"/>		
<b>Unit Cost</b>	PAUC		<input checked="" type="checkbox"/>
	APUC		<input checked="" type="checkbox"/>
Nunn-McCurdy Breaches			
<b>Current UCR Baseline</b>			
	PAUC	Significant	
	APUC	Critical	
<b>Original UCR Baseline</b>			
	PAUC	None	
	APUC	Significant	



## Schedule



Schedule Events				
Events	SAR Baseline Development Estimate	Current APB Development Objective/Threshold		Current Estimate
Milestone II/Procurement (DAB)	Oct 2000	Oct 2000	Apr 2001	Nov 2000
Contract Award EMD/Production	Dec 2000	Dec 2000	Jun 2001	Jan 2001
Critical Design Review	Mar 2002	Mar 2002	Sep 2002	Jul 2002
Initial Operational Capability (IOC)	Dec 2004	Aug 2008	Feb 2009	Jan 2009
Full Operational Capability (FOC)	Dec 2005	Jun 2013	Dec 2013	Jun 2013

### Change Explanations

None

### Acronyms and Abbreviations

DAB - Defense Acquisition Board  
 EMD - Engineering and Manufacturing Development

## Performance

Performance Characteristics				
SAR Baseline Development Estimate	Current APB Development Objective/Threshold	Demonstrated Performance	Current Estimate	
<b>Coverage</b>				
Capable of providing communications connectivity anywhere between 70 deg N and 65 deg S latitude and at all longitudes within each satellites field of view, 24 hrs a day	Capable of providing communications connectivity anywhere between 70 deg N and 65 deg S latitude and at all longitudes within each satellites field of view, 24 hrs a day	Capable of providing communications connectivity anywhere between 65 deg N and 65 deg S latitude and at all longitudes within each satellites field of view, 24 hrs a day	Confirmed by STK. Operationally verified at 64 deg N latitude.	Capable of providing communications connectivity anywhere between 65 deg N and 65 deg S latitude and at all longitudes within each satellites field of view, 24 hrs a day
<b>Capacity</b>				
Each satellite should provide a min throughput of 3.6 Gbps	Each satellite should provide a min throughput of 3.6 Gbps	Each satellite should provide a min throughput of 1.2 Gbps	Calculated simplex throughput of 4.186 Gbps* Current average throughput is 2.1Gbps	Each satellite should provide a min throughput of ~2.14 Gbps
<b>Access and Control</b>				
Provide platform and payload controlled capabilities to perform Launch and Early Orbit, On-Orbit Operations, Station-keeping, Satellite Repositioning, Platform and Payload Maintenance, and Anomaly Identification and Resolution	Provide platform and payload controlled capabilities to perform Launch and Early Orbit, On-Orbit Operations, Station-keeping, Satellite Repositioning, Platform and Payload Maintenance, and Anomaly Identification and Resolution	Provide platform and payload controlled capabilities to perform Launch and Early Orbit, On-Orbit Operations, Station-keeping, Satellite Repositioning, Platform and Payload Maintenance, and Anomaly Identification and Resolution	Positive platform and payload operator ratings	Provide platform & payload controlled capabilities to perform Launch & Early Orbit, On-Orbit Ops, Station-keeping, Sat Repositioning, Platform & Payload Maintenance, & Anomaly ID & resolution
<b>Interoperability</b>				
Satellites must be fully interoperable with existing and programmed DSCS and GBS terminals	Satellites must be fully inter-operable with existing and programmed DSCS and GBS terminals	Satellites must be fully inter-operable with existing and programmed DSCS and GBS terminals	Confirmed interoperability with 15 terminal types, including DSCS and GBS	Satellites must be fully inter-operable with existing and programmed DSCS and GBS terminals

### Change Explanations

None

**Notes**

\*4.1Gbps is based on scenario of optimized ground terminal power/antenna aperture function.

**Acronyms and Abbreviations**

deg N - degrees North

deg S - degrees South

DSCS - Defense Satellite Communications System

Gbps - Gigabits per second

GBS - Global Broadcast Service

hrs - hours

ID - identification

min - minimum

STK - Satellite Tool Kit

## Track to Budget

### RDT&E

Appn	BA	PE
Air Force	3600	04 0603854F
	<b>Project</b>	<b>Name</b>
	4811	Wideband Gapfiller Satellites (Shared)

### Procurement

Appn	BA	PE
Air Force	3080	03 0303600F
	<b>Line Item</b>	<b>Name</b>
	836780	Wideband Gapfiller Satellites
Air Force	3020	05 0303600F
	<b>Line Item</b>	<b>Name</b>
	GAP000	Wideband Gapfiller Satellites

## Cost and Funding

### Cost Summary

Total Acquisition Cost							
Appropriation	BY 2001 \$M			BY 2001 \$M	TY \$M		
	SAR Baseline Development Estimate	Current APB Development Objective/Threshold		Current Estimate	SAR Baseline Development Estimate	Current APB Development Objective	Current Estimate
RDT&E	175.8	321.8	354.0	351.9	178.8	334.7	380.7
Procurement	804.6	1470.8	1617.9	2619.3 <sup>1</sup>	863.7	1640.8	3061.0
Flyaway	--	--	--	2591.5	--	--	3031.7
Recurring	--	--	--	2591.5	--	--	3031.7
Non Recurring	--	--	--	0.0	--	--	0.0
Support	--	--	--	27.8	--	--	29.3
Other Support	--	--	--	27.8	--	--	29.3
Initial Spares	--	--	--	0.0	--	--	0.0
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	980.4	1792.6	N/A	2971.2	1042.5	1975.5	3441.7

<sup>1</sup> APB Breach

#### Cost Notes

The addition of WGS satellites 7-8 in the FY 2011 President's Budget, after a two-year production break, results in increases to the Average Procurement Unit Cost (APUC) and Program Acquisition Unit Cost (PAUC). The Secretary of the Air Force, in a letter dated March 8, 2010, notified Congress of a Nunn-McCurdy breach stating the addition of WGS 7-8 results in APUC growth over the current baseline of greater than the 25 percent Critical Cost Growth threshold. The addition also caused APUC growth over the original baseline and PAUC growth over the current baseline to exceed significant unit cost thresholds.

Total Quantity			
Quantity	SAR Baseline Development Estimate	Current APB Development	Current Estimate
RDT&E	0	0	0
Procurement	3	5	7
Total	3	5	7

## Cost and Funding

### Funding Summary

Appropriation Summary									
FY 2011 President's Budget / December 2009 SAR (TY\$ M)									
Appropriation	Prior	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	To Complete	Total
RDT&E	310.5	52.3	17.9	0.0	0.0	0.0	0.0	0.0	380.7
Procurement	1502.2	215.1	577.4	473.4	23.1	34.9	100.3	134.6	3061.0
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 2011 Total	1812.7	267.4	595.3	473.4	23.1	34.9	100.3	134.6	3441.7
PB 2009 Total	1798.7	42.1	45.4	29.6	23.9	10.8	0.0	0.0	1950.5
Delta	14.0	225.3	549.9	443.8	-0.8	24.1	100.3	134.6	1491.2

Quantity Summary										
FY 2011 President's Budget / December 2009 SAR (TY\$ M)										
Quantity	Undistributed	Prior	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	To Complete	Total
Development	0	0	0	0	0	0	0	0	0	0
Production	0	5	0	1	1	0	0	0	0	7
PB 2011 Total	0	5	0	1	1	0	0	0	0	7
PB 2009 Total	0	5	0	0	0	0	0	0	0	5
Delta	0	0	0	1	1	0	0	0	0	2

## Cost and Funding

### Annual Funding By Appropriation

Annual Funding							
3600   RDT&E   Research, Development, Test, and Evaluation, Air Force							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1999	--	--	--	--	--	--	0.7
2000	--	--	--	--	--	--	4.5
2001	--	--	--	--	--	--	77.7
2002	--	--	--	--	--	--	79.0
2003	--	--	--	--	--	--	--
2004	--	--	--	--	--	--	--
2005	--	--	--	--	--	--	31.7
2006	--	--	--	--	--	--	78.5
2007	--	--	--	--	--	--	28.5
2008	--	--	--	--	--	--	--
2009	--	--	--	--	--	--	9.9
2010	--	--	--	--	--	--	52.3
2011	--	--	--	--	--	--	17.9
Subtotal	--	--	--	--	--	--	380.7

Annual Funding							
3600   RDT&E   Research, Development, Test, and Evaluation, Air Force							
Fiscal Year	Quantity	BY 2001 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1999	--	--	--	--	--	--	0.7
2000	--	--	--	--	--	--	4.5
2001	--	--	--	--	--	--	77.3
2002	--	--	--	--	--	--	77.8
2003	--	--	--	--	--	--	--
2004	--	--	--	--	--	--	--
2005	--	--	--	--	--	--	29.3
2006	--	--	--	--	--	--	70.4
2007	--	--	--	--	--	--	24.9
2008	--	--	--	--	--	--	--
2009	--	--	--	--	--	--	8.4
2010	--	--	--	--	--	--	43.8
2011	--	--	--	--	--	--	14.8
Subtotal	--	--	--	--	--	--	351.9



Annual Funding								
3020   Procurement   Missile Procurement, Air Force								
Fiscal Year	Quantity	TY \$M						
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program	
2001	--	24.6	--	--	24.6	--	24.6	
2002	2	372.9	--	--	372.9	--	372.9	
2003	1	184.1	--	--	184.1	--	184.1	
2004	--	21.8	--	--	21.8	--	21.8	
2005	--	35.4	--	--	35.4	--	35.4	
2006	--	76.1	--	--	76.1	--	76.1	
2007	1	397.5	--	--	397.5	--	397.5	
2008	1	312.3	--	--	312.3	--	312.3	
2009	--	51.6	--	--	51.6	--	51.6	
2010	--	213.4	--	--	213.4	--	213.4	
2011	1	575.7	--	--	575.7	--	575.7	
2012	1	473.4	--	--	473.4	--	473.4	
2013	--	23.1	--	--	23.1	--	23.1	
2014	--	34.9	--	--	34.9	--	34.9	
2015	--	100.3	--	--	100.3	--	100.3	
2016	--	97.9	--	--	97.9	--	97.9	
2017	--	36.7	--	--	36.7	--	36.7	
Subtotal	7	3031.7	--	--	3031.7	--	3031.7	

Annual Funding								
3020   Procurement   Missile Procurement, Air Force								
Fiscal Year	Quantity	BY 2001 \$M						
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program	
2001	--	24.3	--	--	24.3	--	24.3	
2002	2	362.3	--	--	362.3	--	362.3	
2003	1	176.8	--	--	176.8	--	176.8	
2004	--	20.5	--	--	20.5	--	20.5	
2005	--	32.4	--	--	32.4	--	32.4	
2006	--	67.6	--	--	67.6	--	67.6	
2007	1	344.6	--	--	344.6	--	344.6	
2008	1	266.0	--	--	266.0	--	266.0	
2009	--	43.4	--	--	43.4	--	43.4	
2010	--	177.3	--	--	177.3	--	177.3	
2011	1	471.6	--	--	471.6	--	471.6	
2012	1	381.5	--	--	381.5	--	381.5	
2013	--	18.3	--	--	18.3	--	18.3	
2014	--	27.2	--	--	27.2	--	27.2	
2015	--	76.8	--	--	76.8	--	76.8	
2016	--	73.7	--	--	73.7	--	73.7	
2017	--	27.2	--	--	27.2	--	27.2	
Subtotal	7	2591.5	--	--	2591.5	--	2591.5	

The 3020 Procurement funding for FY13 through FY17 on the prior two tables (\$223.3M in BY\$) is associated with the last vehicle in FY12, which increases the cost quantity information for the last vehicle in the Cost Quantity Information on the next table.

Cost Quantity Information		
3020   Procurement   Missile Procurement, Air Force		
Fiscal Year	Quantity	End Item Recurring Flyaway (Aligned With Quantity) BY 2001 \$M
2001	--	--
2002	2	430.9
2003	1	253.7
2004	--	--
2005	--	--
2006	--	--
2007	1	400.9
2008	1	366.3
2009	--	--
2010	--	--
2011	1	537.1
2012	1	602.6
2013	--	--
2014	--	--
2015	--	--
2016	--	--
2017	--	--
Subtotal	7	2591.5

Annual Funding 3080   Procurement   Other Procurement, Air Force							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2003	--	--	--	--	--	15.1	15.1
2004	--	--	--	--	--	10.8	10.8
2005	--	--	--	--	--	--	--
2006	--	--	--	--	--	--	--
2007	--	--	--	--	--	--	--
2008	--	--	--	--	--	--	--
2009	--	--	--	--	--	--	--
2010	--	--	--	--	--	1.7	1.7
2011	--	--	--	--	--	1.7	1.7
Subtotal	--	--	--	--	--	29.3	29.3

Annual Funding 3080   Procurement   Other Procurement, Air Force							
Fiscal Year	Quantity	BY 2001 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2003	--	--	--	--	--	14.7	14.7
2004	--	--	--	--	--	10.3	10.3
2005	--	--	--	--	--	--	--
2006	--	--	--	--	--	--	--
2007	--	--	--	--	--	--	--
2008	--	--	--	--	--	--	--
2009	--	--	--	--	--	--	--
2010	--	--	--	--	--	1.4	1.4
2011	--	--	--	--	--	1.4	1.4
Subtotal	--	--	--	--	--	27.8	27.8

## **Low Rate Initial Production**

There is no LRIP for this program.

## Foreign Military Sales

### Notes

There are no Foreign Military Sales.

International Partnership -- Memorandum of Understanding (MOU) between the United States of America Department of Defense and the Department of Defence of Australia concerning production, operations, and support of Wideband Global Satellite Communications was signed on November 14, 2007.

## Nuclear Costs

None.

## Unit Cost

### Unit Cost Report

Item	BY 2001 \$M	BY 2001 \$M	% Change
	Current UCR Baseline (Apr 2007 APB)	Current Estimate (Dec 2009 SAR)	
<b>Program Acquisition Unit Cost</b>			
Cost	1792.6	2971.2	
Quantity	5	7	
Unit Cost	358.520	424.457	<b>+18.39<sup>1</sup></b>
<b>Average Procurement Unit Cost</b>			
Cost	1470.8	2619.3	
Quantity	5	7	
Unit Cost	294.160	374.186	<b>+27.20<sup>1</sup></b>

Item	BY 2001 \$M	BY 2001 \$M	% Change
	Original UCR Baseline (Dec 2000 APB)	Current Estimate (Dec 2009 SAR)	
<b>Program Acquisition Unit Cost</b>			
Cost	980.4	2971.2	
Quantity	3	7	
Unit Cost	326.800	424.457	+29.88
<b>Average Procurement Unit Cost</b>			
Cost	804.6	2619.3	
Quantity	3	7	
Unit Cost	268.200	374.186	<b>+39.52<sup>1</sup></b>

Item	TY \$M		TY % Change
	Current UCR Baseline (Apr 2007 APB)	Current Estimate (Dec 2009 SAR)	
<b>Program Acquisition Unit Cost (PAUC)</b>			
Cost		3441.7	
Unit Cost		491.671	0.00
<b>Average Procurement Unit Cost (APUC)</b>			
Cost		3061.0	
Unit Cost		437.286	0.00



Item	TY \$M		TY % Change
	Original UCR Baseline (Dec 2000 APB)	Current Estimate (Dec 2009 SAR)	
<b>Program Acquisition Unit Cost (PAUC)</b>			
Cost		3441.7	
Unit Cost		491.671	0.00
<b>Average Procurement Unit Cost (APUC)</b>			
Cost		3061.0	
Unit Cost		437.286	0.00

<sup>1</sup> Nunn-McCurdy Breach

1. The addition of WGS satellites 7-8 in the FY 2011 President's Budget, after a two-year production break, results in increases to the Average Procurement Unit Cost (APUC) and Program Acquisition Unit Cost (PAUC). The Secretary of the Air Force, in a letter dated March 8, 2010, notified Congress of a Nunn-McCurdy breach stating the addition of WGS 7-8 results in APUC growth over the current baseline of greater than the 25 percent Critical Cost Growth threshold. The addition also caused APUC growth over the original baseline and PAUC growth over the current baseline to exceed significant unit cost thresholds.

Unit Cost Breach Data		
Changes From Previous SAR	\$M/Qty.	Percent
PAUC (BY \$M)	71.577	+20.28
APUC (BY \$M)	78.286	+26.46
PAUC Quantity	2	0.00
PAUC (TY \$M)	101.571	+26.04
APUC (TY \$M)	107.306	+32.52

Initial SAR Information	BY \$M	TY \$M
Program Acquisition Cost		

#### Unit Cost PAUC Changes

PAUC growth occurred as a result of the addition of WGS 7-8 after a two-year production break .

#### Unit Cost APUC Changes

APUC growth occurred as a result of the addition of WGS 7-8 after a two-year production break .

#### Impact of Performance or Schedule Changes

There have been no performance or schedule changes.

#### Program Management or Control

Program management and control on the WGS Block II program (WGS 4-6) are driving excellent program performance. The addition of WGS 7-8 in the FY 2011 President's Budget, after a two-year production break, results in increases to the Average Procurement Unit Cost (APUC) and Program Acquisition Unit Cost (PAUC). As a result of the production break between WGS-6 and WGS-7, the program will incur the cost to re-establish the supplier and subcontractor base and address parts obsolescence issues. The impacts of the production break have been studied and are manageable.

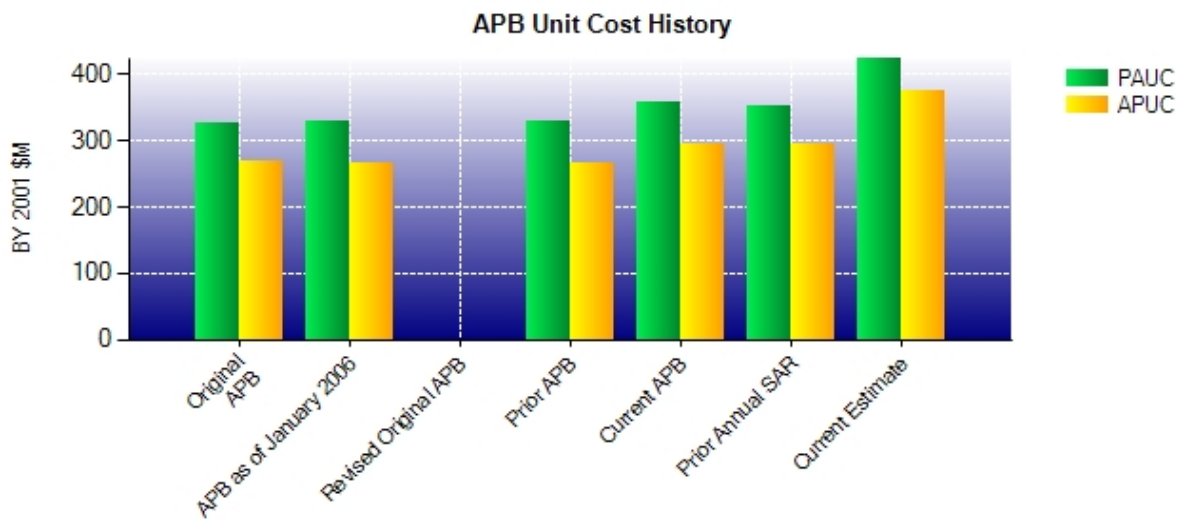
#### **Cost Control Actions**

Cost performance on the WGS Block II program is within three percent of target.

#### **Nunn-McCurdy Comments**

The addition of WGS satellites 7-8 in the FY 2011 President's Budget, after a two-year production break, results in increases to the Average Procurement Unit Cost (APUC) and Program Acquisition Unit Cost (PAUC). The Secretary of the Air Force, in a letter dated March 8, 2010, notified Congress of a Nunn-McCurdy breach stating the addition of WGS 7-8 results in APUC growth over the current baseline of greater than the 25 percent Critical Cost Growth threshold. The addition also caused APUC growth over the original baseline and PAUC growth over the current baseline to exceed significant unit cost thresholds.

**Unit Cost History**



Item	Date	BY 2001 \$M		TY \$M	
		PAUC	APUC	PAUC	APUC
Original APB	Dec 2000	326.800	268.200	347.500	287.900
APB as of January 2006	Feb 2004	329.500	265.140	353.420	286.480
Revised Original APB	N/A	N/A	N/A	N/A	N/A
Prior APB	Feb 2004	329.500	265.140	353.420	286.480
Current APB	Apr 2007	358.520	294.160	395.100	328.160
Prior Annual SAR	Dec 2007	352.880	295.900	390.100	329.980
Current Estimate	Dec 2009	424.457	374.186	491.671	437.286

**SAR Unit Cost History**

Current SAR Baseline to Current Estimate (TY \$M)									
Initial PAUC Development Estimate	Changes								PAUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
347.500	3.243	74.200	0.000	19.057	50.557	0.000	-2.886	144.171	491.671

Current SAR Baseline to Current Estimate (TY \$M)									
Initial APUC Development Estimate	Changes								APUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
287.900	2.800	108.258	0.000	0.000	41.214	0.000	-2.886	149.386	437.286

SAR Baseline History				
Item	SAR Planning Estimate	SAR Development Estimate	SAR Production Estimate	Current Estimate
Milestone I	N/A	N/A	N/A	N/A
Milestone II	N/A	N/A	Oct 2000	Nov 2000
Milestone III	N/A	N/A	N/A	N/A
IOC	N/A	N/A	Dec 2004	Jan 2009
Total Cost (TY \$M)	N/A	N/A	1042.5	3441.7
Total Quantity	N/A	N/A	3	7
PAUC	N/A	N/A	347.500	491.671

## Cost Variance

Summary TY \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Development Estimate)	178.8	863.7	--	1042.5
Previous Changes				
Economic	+3.1	+24.2	--	+27.3
Quantity	--	+634.2	--	+634.2
Schedule	--	--	--	--
Engineering	+63.2	--	--	+63.2
Estimating	+55.5	+148.0	--	+203.5
Other	--	--	--	--
Support	--	-20.2	--	-20.2
Subtotal	+121.8	+786.2	--	+908.0
Current Changes				
Economic	--	-4.6	--	-4.6
Quantity	--	+1275.2	--	+1275.2
Schedule	--	--	--	--
Engineering	+70.2	--	--	+70.2
Estimating	+9.9	+140.5	--	+150.4
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+80.1	+1411.1	--	+1491.2
Total Changes	+201.9	+2197.3	--	+2399.2
Current Estimate	380.7	3061.0	--	3441.7

Summary BY 2001 \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Development Estimate)	175.8	804.6	--	980.4
Previous Changes				
Economic	--	--	--	--
Quantity	--	+560.5	--	+560.5
Schedule	--	--	--	--
Engineering	+59.7	--	--	+59.7
Estimating	+49.4	+132.7	--	+182.1
Other	--	--	--	--
Support	--	-18.3	--	-18.3
Subtotal	+109.1	+674.9	--	+784.0
Current Changes				
Economic	--	--	--	--
Quantity	--	+1035.8	--	+1035.8
Schedule	--	--	--	--
Engineering	+58.6	--	--	+58.6
Estimating	+8.4	+104.0	--	+112.4
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+67.0	+1139.8	--	+1206.8
Total Changes	+176.1	+1814.7	--	+1990.8
Current Estimate	351.9	2619.3	--	2971.2

Previous Estimate: December 2007

RDT&E	\$M	
Current Change Explanations	Base Year	Then Year
Congressional add for program evolution and sustainment (Estimating)	+8.4	+9.9
Funds added for Block II Follow-On Non-Recurring Engineering (Engineering)	+58.6	+70.2
<b>RDT&amp;E Subtotal</b>	<b>+67.0</b>	<b>+80.1</b>

Procurement	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices (Economic)	N/A	-4.6
Quantity variance resulting from an increase of 2 satellites from 5 to 7 (Air Force). (Quantity)	+1035.8	+1275.2
Adjustment for current and prior escalation (Estimating)	+1.8	+1.8
Congressional add for program evolution and sustainment (Estimating)	+25.1	+30.0
Additional launch services and program support due to additional WGS satellites (Estimating) (QR)	+99.6	+134.7
Reprogramming for higher headquarters Air Force requirements (Estimating)	-21.7	-25.0
General congressional reductions (Estimating)	-0.8	-1.0
<b>Procurement Subtotal</b>	<b>+1139.8</b>	<b>+1411.1</b>

(QR) Quantity Related

### Change Explanations Notes

## Contracts

### Contract Identification

**Appropriation:** RDT&E  
**Contract Name:** WGS-Block I (SV 1-3)  
**Contractor:** Boeing  
**Contractor Location:** El Segundo, CA 90245  
**Contract Number:** F04701-00-C-0011/1  
**Contract Type:** Firm Fixed Price (FFP)  
**Award Date:** January 02, 2001  
**Definitization Date:** January 02, 2001

Contract Price								
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)		
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager	
137.0	N/A	0	178.9	N/A	0	178.9	178.9	

### Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to

### Cost and Schedule Variance Explanations

Cost and Schedule Variance reporting is not required on this (FFP) contract.

### Notes

The primary cause of the contract increase since the initial contract price are due to an Engineering Change Proposal (ECP) for Unmanned Aerial Vehicle (UAV) Radio Frequency (RF) by-pass for \$14.0M and a Parts Obsolescence Study for \$12.0M. The UAV RF by-pass modifies the WGS payload to support two UAVs at Ka-band. The remainder of the increase is due to various study ECP's to increase the government's understanding of Boeing's design and evaluate the design's mission assurance.

This contract is now over 90% complete and will no longer be reported.



**Contract Identification**

**Appropriation:** Procurement  
**Contract Name:** WGS-Block I (SV 1-3)  
**Contractor:** Boeing  
**Contractor Location:** El Segundo, CA 90245  
**Contract Number:** F04701-00-C-0011/2  
**Contract Type:** Firm Fixed Price (FFP)  
**Award Date:** January 02, 2001  
**Definitization Date:** January 02, 2001

Contract Price								
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)		
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager	
19.6	N/A	0	654.1	N/A	3	654.1	654.1	

**Target Price Change Explanation**

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to

**Cost and Schedule Variance Explanations**

Cost and Schedule Variance reporting is not required on this (FFP) contract.

**Notes**

The initial contract price of \$19.6M was for long lead parts for satellites 1 and 2. Since then, options for satellite 3 long lead and full procurement for satellites 1, 2, and 3 were exercised. The options exercised and various production engineering change proposals (ECPs), such as launch operations support, caused the overall increase from the initial contract price.

This contract is now over 90% complete and will no longer be reported.

**Contract Identification**

**Appropriation:** RDT&E  
**Contract Name:** WGS-Block II (SV 4-6)  
**Contractor:** Boeing  
**Contractor Location:** Los Angeles, CA 90245  
**Contract Number:** FA8808-06-C-0001/3  
**Contract Type:** Fixed Price Incentive(Firm Target) (FPIF)  
**Award Date:** February 17, 2006  
**Definitization Date:** October 17, 2006

Contract Price								
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)		
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager	
72.7	84.8	0	72.7	84.8	0	73.5	73.5	

Contract Variance			
Item	Cost Variance		Schedule Variance
Cumulative Variances To Date (12/18/2009)	-4.4		0.0
Previous Cumulative Variances	-3.2		-0.7
Net Change	-1.2		+0.7
Percent Variance	-7.15%		0.00%
Percent Complete	+100.00%		

**Cost and Schedule Variance Explanations****General Contract Variance Explanation**

The \$1.2M net unfavorable Cost Variance (CV) change is due to continued problems in the subcontract and material procurement scheduling and planning area. The resolution was to re-plan and move the completion date out to June 30, 2008. This resolved the Schedule Variance (SV) issue and allowed the completion of subcontractor qualification efforts, prime contractor testing and review, and Program Office acceptance.

This effort completed June 30, 2008. The Non-Recurring Engineering (NRE) is 100% complete.

**Notes**

The RDT&E effort is 100% complete. The potential cost overrun upon CLIN close-out, including close-out cost, is \$4.4M. This overrun is mitigated by \$1.7M in unused Management Reserve (MR) yielding a potential cost overrun of \$2.7M.

This contract is now over 90% complete and will no longer be reported.

**Contract Identification**

**Appropriation:** Procurement  
**Contract Name:** WGS-Block II (SV 4-6)  
**Contractor:** Boeing  
**Contractor Location:** Los Angeles, CA 90245  
**Contract Number:** FA8808-06-C-0001/4  
**Contract Type:** Fixed Price Incentive(Firm Target) (FPIF)  
**Award Date:** February 17, 2006  
**Definitization Date:** October 17, 2006

Contract Price							
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
49.6	56.5	1	692.0	805.6	2	689.5	684.7

**Target Price Change Explanation**

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/18/2009)	-18.0	-5.3
Previous Cumulative Variances	-1.1	-5.0
Net Change	-16.9	-0.3
Percent Variance	-3.88%	-1.13%
Percent Complete	+80.44%	

## Cost and Schedule Variance Explanations

### General Contract Variance Explanation

The net unfavorable Cost Variance (CV) change is primarily due to subcontractor and/or vendor issues resulting in late deliveries, work around, and requiring added resources. The main issues are:

- 1) Power Amplifier Module/Beam Forming Module (PAM/BFM) - Integrated Array panel anomalies, sunshield structure, vendor difficulties to understand and implement Boeing design; startup and parts issues.
- 2) Telemetry Tracking and Control - Resolution of Transponder Channel 12/16 spurious signal anomalies; rework and repair; and, Spur anomaly rework and retest.
- 3) Platform - Propellant Tank failure causing redesign.
- 4) Converters - Monolithic Microwave Integrated Circuit (MMIC) failure investigation and rework; increased Component Engineering Support.
- 5) Flight Software - Increased technical support to sell-off change in requirements between Blk I and Blk II.
- 6) Storage/Batteries - Accelerated Battery Cell build due to available resources.
- 7) Microwave Power Amplifier (MPA) - Increased technical support to resolve Traveling Wave Tube (TWT), Traveling Wave Tube Amplifier (TWTA), Channel Control Linearizer Unit (CCLU) and Set-point Control Attenuator (SCA) issues.

Although an improvement from the previous report, the net unfavorable Schedule Variance (SV) is due to the implementation of a less aggressive schedule replan and process improvements incorporated from lessons learned in the subcontract/vendor area while maintaining all contract delivery dates. In addition, Xenon Ion Propulsion System (XIPS) is delivering ahead of baseline and PAM/BFM Transmit (TX) Array deliveries are recovering schedule.

### Notes

The initial target price is for advanced procurement for Space Vehicle 4 (SV-4). The increase, since the initial target price, is for the production contract option for SV-4, the advanced procurement for SV-5, the Launch Services and Astrotech Launch Site Processing Facilities for SV-4, and the production contract for SV-5. The SV-4 production contract option was exercised November 1, 2006. The SV-4 Launch Services and Astrotech Launch Site Processing Facilities contract options were exercised April 25, 2007. The SV-5 advanced procurement contract option was exercised December 19, 2006. The SV-5 production contract option was exercised on December 21, 2007 and the SV-5 Astrotech Launch Site Processing Facilities contract option was exercised on May 21, 2009. SV-6 funding is not included because funding is being provided by Australia as part of an International Partnership.

## Deliveries and Expenditures

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	0	0	0	--
Production	3	3	7	42.86%
Total Program Quantity Delivered	3	3	7	42.86%

Expended and Appropriated (TY \$M)			
Total Acquisition Cost	3441.7	Years Appropriated	12
Expended to Date	1534.0	Percent Years Appropriated	63.16%
Percent Expended	44.57%	Appropriated to Date	2080.1
Total Funding Years	19	Percent Appropriated	60.44%

## Operating and Support Cost

### Assumptions and Ground Rules

Operating and Support costs include all costs for operating, maintaining and supporting the Wideband Global SATCOM (WGS) assets (five satellites and ground segment) for an assumed design life of twelve years (2009-2021). The costs include program software maintenance, unit level consumption, depot maintenance, contractor logistics support and sustaining engineering support for both space and ground segments. WGS was developed to maximize use of existing Army and Air Force infrastructures; the operating and support costs are based on current and future infrastructure cost projections.

The antecedent system is Defense Satellite Communication System (DSCS) III. The first DSCS III satellite was launched in October 1982, and the last DSCS III satellite was launched in August 2003. Operating and support efforts for DSCS transitioned to Air Force Operations and Maintenance funding in fiscal year 2005. Prior to this transition, on-going operations and support for on-orbit DSCS satellites were part of missile procurement costs. Operating and Support costs include all costs for operating, maintaining and supporting the DSCS assets (14 satellites and ground segment) for an assumed design life of ten years (2001-2010).

Operating and Support costs for both systems are based on validated requirements from the Air Force Space Command (AFSPC) Logistics Support Requirements Brochures for the FY04 President's Budget. These estimates were finalized on April 15, 2002 with AFSPC's budget request to Headquarters Air Force.

A system as used in the table below is defined as 5 satellites and ground segment.

#### Cost Estimate Reference:

None

#### Sustainment Strategy:

None

#### Antecedent Information:

None

Unitized O&S Costs BY2001 \$M			
Cost Element	WGS Annual Average For System	DSCS III (Antecedent) Annual Average For System	
Mission Pay & Allowance	0.000	0.000	0.000
Unit Level Consumption	0.500	0.700	0.700
Intermediate Maintenance	0.000	0.000	0.000
Depot Maintenance	0.024	0.030	0.030
Contractor Support	0.200	0.300	0.300
Sustaining Support	8.400	10.500	10.500
Indirect	0.900	1.100	1.100
Other	1.600	2.000	2.000
Total	11.624	14.630	14.630

#### Unitized Cost Comments:

None

Item	Total O&S Cost \$M			
	WGS			DSCS III (Antecedent)
	Current Development APB Objective/Threshold		Current Estimate	
Base Year	N/A	N/A	140.4	146.0
Then Year	N/A	N/A	169.4	156.1

Total O&S Cost Comment  
None

**Disposal Estimate Details**

Date of Estimate:

Source of Estimate:

Disposal/Demilitarization Total Cost (BY 2001 \$M):