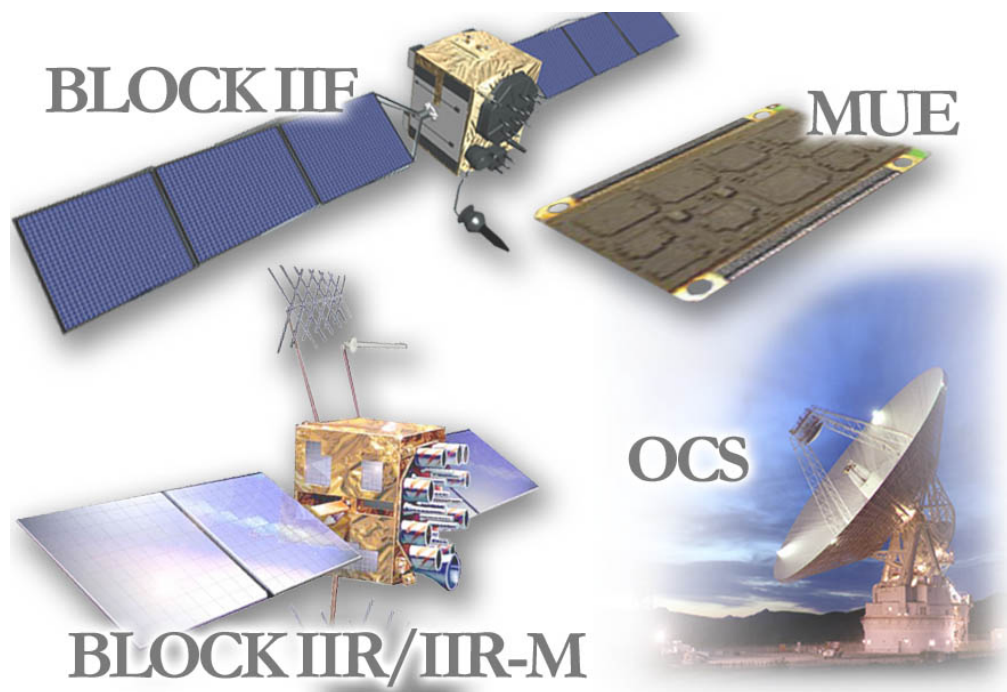




Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-166



NAVSTAR Global Positioning System (NAVSTAR GPS)

As of December 31, 2012

Defense Acquisition Management
Information Retrieval
(DAMIR)

Table of Contents

Program Information	3
Responsible Office	3
References	3
Mission and Description	4
Executive Summary	5
Threshold Breaches	7
Schedule	8
Performance	11
Track To Budget	13
Cost and Funding	14
Low Rate Initial Production	32
Foreign Military Sales	33
Nuclear Cost	33
Unit Cost	34
Cost Variance	40
Contracts	46
Deliveries and Expenditures	57
Operating and Support Cost	58

Program Information

Program Name

NAVSTAR Global Positioning System (NAVSTAR GPS)

DoD Component

Air Force

Responsible Office

Responsible Office

Col Bernard Gruber
483 North Aviation Boulevard
El Segundo, CA 90245-2808

Bernard.Gruber@us.af.mil

Phone	310-653-3001
Fax	310-653-3005
DSN Phone	633-3001
DSN Fax	633-3005
Date Assigned	July 19, 2010

References

SPACE & CONTROL

SAR Baseline (Production Estimate)

Under Secretary of the Air Force (USecAF) Approved Acquisition Program Baseline (APB) dated February 26, 2002

Approved APB

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated February 9, 2007

USER EQUIPMENT

SAR Baseline (Production Estimate)

Under Secretary of the Air Force (USecAF) Approved Acquisition Program Baseline (APB) dated February 26, 2002

Approved APB

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated February 9, 2007

Mission and Description

The Navstar Global Positioning System (GPS) is a space-based radio positioning, navigation, and time distribution system. GPS provides precise, continuous, all-weather, common-grid positioning, velocity, navigation, and time reference capability to civil, commercial, and military users worldwide. Military mission areas supported include: navigation and position fixing; air interdiction; close air support; special operations; strategic attack; counter-air and aerospace defense; theater and tactical command, control, communications and intelligence; precision munitions guidance; and ground/sea warfare. GPS also carries a suite of nuclear detonation detection system sensors as a secondary payload. These sensors provide worldwide, near realtime, 3-dimensional location of nuclear detonations.

The Modernized Space and Control portion reported here includes Block IIR, IIR-M, and IIF satellite capabilities and associated control segments. The Modernized User Equipment program is currently developing two prototype M-Code form factors to mature the technology and industrial base necessary to support the Military GPS User Equipment (MGUE) Program.

Executive Summary

GPS Space Segment

Global Positioning System (GPS) IIF satellites provide improved accuracy, greater security, anti-jam capabilities, and add the new L5 signal, a dedicated civilian safety-of-life signal, while maintaining baseline legacy GPS performance. Twelve Space Vehicles (SVs) are on contract, with SVs 1-3 awarded as Cost-Plus-Award-Fee and SVs 4-12 as Fixed-Price-Incentive-Fee. The program remains focused on mission assurance, satellite production and launch, and on-orbit sustainment. SV-1 (launched May 27, 2010), SV-2 (launched July 16, 2011), and SV-4 (launched October 4, 2012) transitioned to operations and are among the most accurate in the constellation. The remaining nine GPS IIF SVs on contract are in storage or various stages of assembly, integration and test. SV-3 is in storage with acceptance pending an investigation of a bus power system issue. Final delivery of SV-3 will mark the closeout of the FY 2003 Cost-Plus production effort. SV-5 has been called up for launch in May 2013, and is at Cape Canaveral Air Force Station for launch processing. SV-6 and SV-7 were delivered in August 2012, placed into storage at the factory, and are awaiting installation of Rubidium Frequency Standards (RFS). SV-8 and 9 finished production and were placed in storage in December 2012. SV-8 was accepted at that time. The DD250 was delayed on SV-9 pending resolution of a battery charger performance issue. Subsequently, the path forward on the SV-9 battery charger has now been resolved clearing the path for acceptance of SV-9 in June 2013. SVs 10-12 are scheduled for delivery in June, August, and October of 2013, respectively.

In 2011, the program began work on re-designing the L1 transmitter in order to bring the IIF operational signal power into line with the rest of the constellation. This improved design will be implemented on two vehicles (SVs 9 and 12). The modified transmitter components experienced design and manufacturing challenges in 2012 which delayed the delivery of the final three SVs. Due to repeated test failures on the new flight parts, the contractor has started a second source to deliver this component. The first one is expected by June 2013.

Production testing of the RFS revealed unexpected depletion of the xenon gas pressure in the lamps that could pose a threat to mission life from the dual RFSs on each SV. In response, the IIF program successfully tested an increase in xenon gas pressure that will ensure on-orbit mission reliability requirements are met.

The 2011 SAR reported on a technical concern regarding the SV-2 Cesium Frequency Standard (CFS) that suffered a corona event and is no longer usable. All remaining SVs had their CFS reworked and this issue is considered closed.

The period of performance for the IIF contract ended December 31, 2012. The production Contract Line Item Number (CLIN) on that contract was extended at no cost through May 2013 to complete production, and will require an additional no-cost extension through October 2013 based on the SV 10-12 production schedule. On December 28, 2012 the government awarded a follow-on contract to continue GPS IIF Launch Operations and On-Orbit Support services through 2017.

GPS Control Segment

Both operational Architectural Evolution Plan (AEP) and the Launch/Early Orbit, Anomaly Resolution and Disposal Operations (LADO) satellite command and control (C2) systems continue to perform well. Availability and dependability metrics for both systems continue to exceed standards.

The program fielded the next major AEP upgrade (V5.8) in July 2012 without any impacts to world-wide operational users. AEP V5.8 provided needed C2 improvements to implement the U.S. Strategic Command Selective Availability Anti-Spoofing Module (SAASM) Operational Concept. It also removed unneeded limitations and

restrictions on extended SAASM functionality. The successful fielding and operational acceptance of the AEP V5.8 software was a result of the extensive testing that was conducted in CY 2011.

Another major accomplishment for the control segment was the successful launch of the third GPS IIF satellite vehicle using the LADO system in October 2012. After accomplishing initial satellite vehicle bus checkout with LADO, the new IIF satellite was transferred to AEP for payload checkout and set operational to world-wide users in November 2012.

Finally, the contract for sustainment of AEP was recompleted this year and awarded to Lockheed Martin in December 2012. The GPS Control Segment (GCS) sustainment contract is a one year base plus five one year options on a firm fixed price contract valued at \$104M. This successful, full and open, competition resulted in the government realizing over 40% savings from our FY 2012 baseline under the previous contract. The GCS contract insures that AEP will be supported until the fielding of the Next Generation Operational Control System.

GPS User Equipment

The Modernized User Equipment (MUE) effort was initiated in 2006 to demonstrate the "proof of principal" and mature the critical technologies necessary to realize modernized GPS capabilities. Rockwell Collins, L-3, and Raytheon execute contracts for the MUE efforts. The contracts have continued to mature Military-Code (M-Code) capable GPS receiver technology. The contractors began Functional Qualification Testing (FQT) of the ground based receiver card in April 2010 and completed the final Functional Quality Review (FQR) in October 2011. Independent government testing is underway and is scheduled to conclude no later than third quarter FY 2013. The delay allows for refined test plans to assess the Anti-Spoof Critical Technology Element (CTE).

Test results have demonstrated a Technical Readiness Level (TRL) 6 for the CTEs of M-Code Acquisition Engine, M-Code Crypto, Anti-Tamper, and SAASM Crypto. FQR for avionics based receiver cards was held in December 2011, independent government testing has begun, and the testing is scheduled to conclude in the fourth quarter of FY 2013.

The prototype receiver cards built under this activity are currently undergoing testing and will be evaluated by an independent Technology Readiness Assessment (TRA) team. Security evaluation, receiver card characterization, integration into operational platforms, and Government testing results will form the basis for the assessment. The TRA will support Military GPS User Equipment (MGUE) Increment 1 Milestone B. The MGUE Increment 1 program will leverage the technology development under the MUE program and develop two production ready status GPS receiver form factors for the joint services.

In addition to testing prototype cards, the program continues to leverage the MUE contracts by implementing several updates to Interface Control Documents (ICDs) and fixing deficiencies found during FQT. All three contractors have completed all software fixes. All three contractors will hold technical demonstrations this fiscal year to demonstrate success of their software fixes.

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

This is the final SAR for the MUE program, because the program is more than 90% complete.

Threshold Breaches

SPACE & CONTROL

APB Breaches		
--------------	--	--

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

Explanation of Breach

This breach was previously reported in the December 2009 SAR.

Nunn-McCurdy Breaches		
-----------------------	--	--

Current UCR Baseline		
	PAUC	None
	APUC	None
Original UCR Baseline		
	PAUC	None
	APUC	None

USER EQUIPMENT

APB Breaches		
--------------	--	--

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

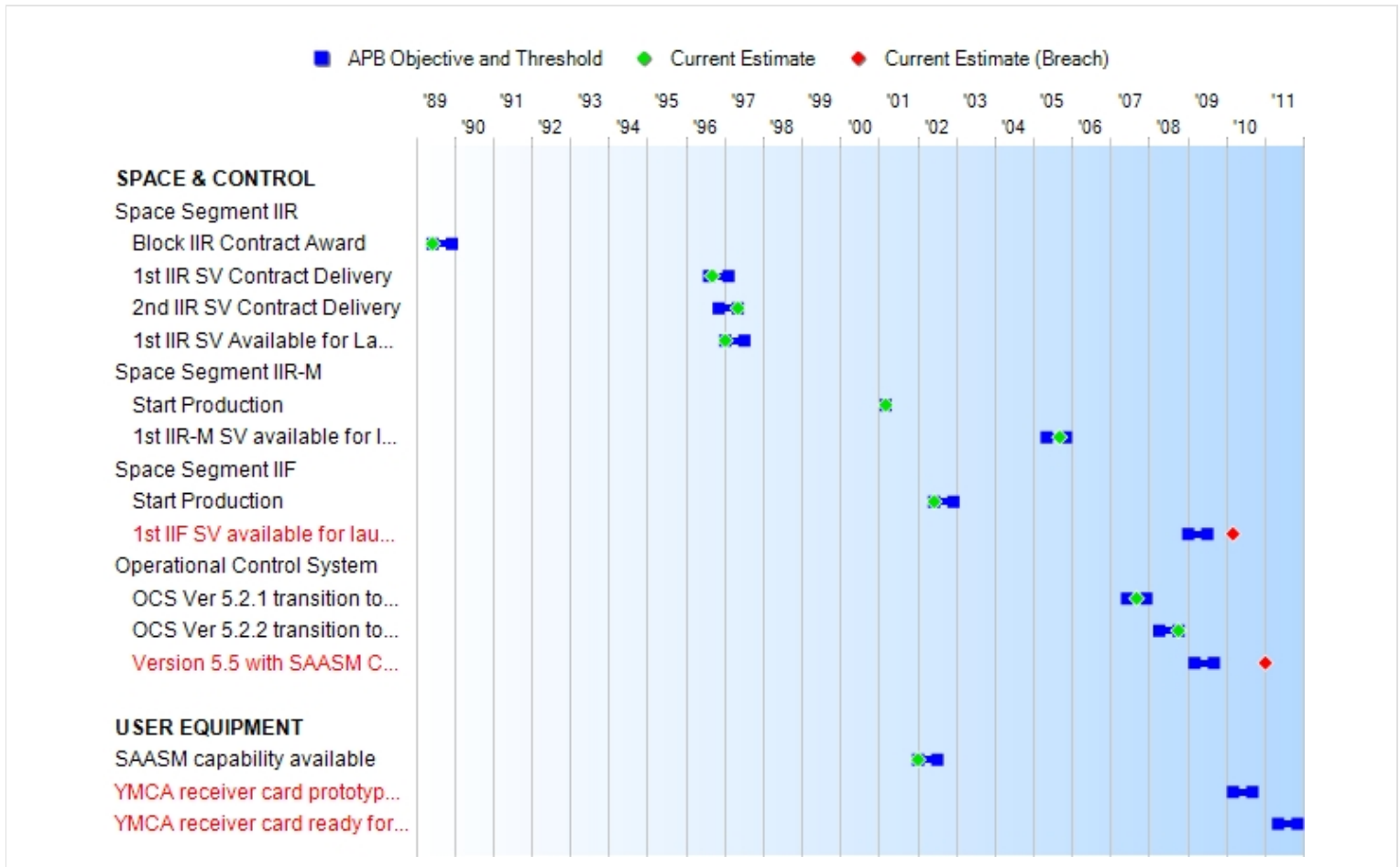
Explanation of Breach

This breach was previously reported in the December 2010 SAR.

Nunn-McCurdy Breaches		
-----------------------	--	--

Current UCR Baseline		
	PAUC	None
	APUC	None
Original UCR Baseline		
	PAUC	None
	APUC	None

Schedule



SPACE & CONTROL				
Milestones	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Current Estimate
Space Segment IIR				
Block IIR Contract Award	JUN 1989	JUN 1989	DEC 1989	JUN 1989
1st IIR SV Contract Delivery	AUG 1996	AUG 1996	FEB 1997	SEP 1996
2nd IIR SV Contract Delivery	NOV 1996	NOV 1996	MAY 1997	MAY 1997
1st IIR SV Available for Launch	JAN 1997	JAN 1997	JUL 1997	JAN 1997
Space Segment IIR-M				
Start Production	MAR 2001	MAR 2001	MAR 2001	MAR 2001
1st IIR-M SV available for launch	MAY 2003	MAY 2005	NOV 2005	SEP 2005
Space Segment IIF				
Start Production	JUN 2002	JUN 2002	DEC 2002	JUN 2002
1st IIF SV available for launch	JUN 2005	JAN 2009	JUL 2009	MAR 2010 ¹
Operational Control System				
OCS Ver 5.2.1 transition to operations with Accuracy Improvement and M-Code, L2C, and L5 test capability	N/A	JUN 2007	DEC 2007	SEP 2007
OCS Ver 5.2.2 transition to operations with OCS V5.2.1 and IIF capabilities	N/A	APR 2008	OCT 2008	OCT 2008
Version 5.5 with SAASM Capability for IIR & IIF available for transition to operations	N/A	MAR 2009	SEP 2009	JAN 2011 ¹

¹APB Breach

Acronyms And Abbreviations

L2C - 2nd Civil Signal
L5 - 3rd Civil Signal
M-Code - Military Code
OCS - Operational Control Segment
SAASM - Selective Availability/Anti-Spoofing Module
SV - Space Vehicle
Ver - Version

Change Explanations

None

USER EQUIPMENT				
Milestones	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Current Estimate
SAASM capability available	JAN 2002	JAN 2002	JUL 2002	JAN 2002
YMCA receiver card prototype complete	N/A	MAR 2010	SEP 2010	N/A ¹
YMCA receiver card ready for delivery to platform	N/A	MAY 2011	NOV 2011	N/A ¹

¹APB Breach

Acronyms And Abbreviations

SAASM - Selective Availability/Anti-Spoofing Module
 YMCA - Y-Code/M-Code/Coarse-Acquisition

Change Explanations

None

Memo

As reported in the 2010 SAR, based on the recommendation of the Undersecretary of Defense for Acquisition, Technology and Logistics (AT&L) at the January 29, 2010 Annual Global Positioning System Enterprise Review, and recorded in a May 24, 2010 memo, the Modernized User Equipment milestones in the Navstar Acquisition Program Baseline are no longer applicable.

Performance

SPACE & CONTROL					
Characteristics	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Demonstrated Performance	Current Estimate
PPS System Perf					
Pos Accuracy	2.1m H 4.0m V	1.3m H 2.6m V	17m H 35m V	TBD	2.8m H 5.8m V
Time Transfer	10nsec	3.3ns	40ns	TBD	6.7ns
SPS System Perf					
Pos Accuracy	1.0m H 4.0m V	1.3m H 2.6m V	17m H 35m V	TBD	2.8m H 5.8m V
Time Transfer	40nsec	3.3ns	40ns	TBD	6.7ns
L5 Signal Power	-154dBW	-154.0dB W	-154.9dB W	TBD	-154.3dB W
Flexible Power					
Max L1 P-Code	N/A	-152.6dB W	-155.2dB W	TBD	-152.8dBW
Max L2 P-Code	N/A	-152.9dB W	-156.6dB W	TBD	-154.0dBW
L2C Signal Power	N/A	-158.5dB W	-160.0dB W	TBD	-158.0dBW

Requirements Source: Operational Requirements Document (ORD) dated February 18, 2000

Acronyms And Abbreviations

dBW - Decibel Watt (Decibels relative to one Watt)
 L2C - 2nd Civil Signal
 L5 - 3rd Civil Signal
 m H - Meters Horizontal
 m V - Meters Vertical
 N/A - Not Available
 ns/nsec - Nanoseconds
 Perf - Performance
 Pos - Position
 PPS - Precise Positioning Service
 SPS - Standard Positioning Service
 TBD - To Be Determined

Change Explanations

None

USER EQUIPMENT					
Characteristics	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Demonstrated Performance	Current Estimate
PPS System Performance					
Time-To-First-Fix	1 min	1 min	2 min	TBD	.8 Min
Pos Accuracy	2.1m H 4.0m V	2.1m H 4.0m V	19m H 38m V	TBD	7.9m H 16.2m V
Velocity	0.01m/s	0.01m/s	0.1 m/s	TBD	.01 m/s
Time Transfer	10nsec	10 ns	44ns	TBD	10ns

Requirements Source: Capability Development Document (CDD) dated December 15, 2009

Acronyms And Abbreviations

m H - Meters Horizontal
 m V - Meters Vertical
 m/s - Meters per Second
 min - Minute
 ns/nsec - Nanoseconds
 Pos - Position
 PPS - Precise Positioning Service
 TBD - To Be Determined

Change Explanations

None

Track To Budget**SPACE & CONTROL****RDT&E**

APPN 3600	BA 07	PE 0305165F	(Air Force)	
	Project 3030	NAVSTAR GPS (Space and Control) Air Force		(Sunk)
	Air Force			

Procurement

APPN 3020	BA 05	PE 0305165F	(Air Force)	
	ICN MGPS00	NAVSTAR GPS (Space and Control) Air Force		
APPN 3080	BA 03	PE 0305165F	(Air Force)	
	ICN 836730	NAVSTAR GPS (Space and Control) Air Force	(Shared)	(Sunk)
	ICN 836790	NAVSTAR GPS (Space and Control) Air Force	(Shared)	
APPN 3080	BA 05	PE 0305165F	(Air Force)	
	ICN 861900	NAVSTAR GPS (Space and Control) Air Force	(Shared)	

USER EQUIPMENT**RDT&E**

APPN 3600	BA 07	PE 0305164F	(Air Force)	
	Project 3028	NAVSTAR GPS (User Equip)	(Shared)	(Sunk)

Shared funding line supports both Modernized User Equipment (MUE) and Military Global Positioning System User Equipment (MGUE), however only MUE funding is included and reported in the Cost and Funding Section of this Selected Acquisition Report (SAR).

Cost and Funding**Cost Summary - Total Program****Total Acquisition Cost and Quantity - Total Program**

Appropriation	BY2000 \$M			BY2000 \$M	TY \$M		
	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Current Estimate	SAR Baseline Prod Est	Current APB Production Objective	Current Estimate
RDT&E	2319.7	3650.4	--	3379.4	2430.2	3984.8	3659.1
Procurement	3493.7	4025.8	--	4057.3	3565.1	4259.0	4336.7
Flyaway	3205.8	--	--	3658.8	3259.8	--	3868.6
Recurring	2996.5	--	--	3454.8	3043.2	--	3653.0
Non Recurring	209.3	--	--	204.0	216.6	--	215.6
Support	287.9	--	--	398.5	305.3	--	468.1
Other Support	254.3	--	--	392.5	273.5	--	461.1
Initial Spares	33.6	--	--	6.0	31.8	--	7.0
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	5813.4	7676.2	N/A	7436.7	5995.3	8243.8	7995.8

Cost and Funding**Cost Summary - SPACE & CONTROL****Total Acquisition Cost and Quantity - SPACE & CONTROL**

Appropriation	BY2000 \$M			BY2000 \$M	TY \$M		
	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Current Estimate	SAR Baseline Prod Est	Current APB Production Objective	Current Estimate
RDT&E	1776.2	2219.1	2441.0	2141.6	1829.3	2330.2	2240.4
Procurement	3239.4	3768.6	4145.5	4057.3	3291.6	3977.8	4336.7
Flyaway	3205.8	--	--	3658.8	3259.8	--	3868.6
Recurring	2996.5	--	--	3454.8	3043.2	--	3653.0
Non Recurring	209.3	--	--	204.0	216.6	--	215.6
Support	33.6	--	--	398.5	31.8	--	468.1
Other Support	0.0	--	--	392.5	0.0	--	461.1
Initial Spares	33.6	--	--	6.0	31.8	--	7.0
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	5015.6	5987.7	N/A	6198.9	5120.9	6308.0	6577.1

Quantity	SAR Baseline Prod Est	Current APB Production	Current Estimate
RDT&E		0	0
Procurement		33	33
Total		33	33

Cost Summary - USER EQUIPMENT**Total Acquisition Cost and Quantity - USER EQUIPMENT**

Appropriation	BY2000 \$M			BY2000 \$M	TY \$M		
	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Current Estimate	SAR Baseline Prod Est	Current APB Production Objective	Current Estimate
RDT&E	543.5	1431.3	1574.4	1237.8	600.9	1654.6	1418.7
Procurement	254.3	257.2	282.9	0.0	273.5	281.2	0.0
Flyaway	0.0	--	--	0.0	0.0	--	0.0
Recurring	0.0	--	--	0.0	0.0	--	0.0
Non Recurring	0.0	--	--	0.0	0.0	--	0.0
Support	254.3	--	--	0.0	273.5	--	0.0
Other Support	254.3	--	--	0.0	273.5	--	0.0
Initial Spares	0.0	--	--	0.0	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	797.8	1688.5	N/A	1237.8	874.4	1935.8	1418.7

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

Cost and Funding**Funding Summary - Total Program**

**Appropriation and Quantity Summary - Total Program
FY2014 President's Budget / December 2012 SAR (TY\$ M)**

Appropriation	Prior	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	To Complete	Total
RDT&E	3615.2	43.9	0.0	0.0	0.0	0.0	0.0	0.0	3659.1
Procurement	4145.7	65.8	67.8	33.5	21.0	2.4	0.5	0.0	4336.7
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	7760.9	109.7	67.8	33.5	21.0	2.4	0.5	0.0	7995.8
PB 2013 Total	7773.8	109.9	85.5	15.8	2.4	0.4	0.0	0.0	7987.8
Delta	-12.9	-0.2	-17.7	17.7	18.6	2.0	0.5	0.0	8.0

Cost and Funding

Funding Summary - SPACE & CONTROL

Appropriation and Quantity Summary - SPACE & CONTROL FY2014 President's Budget / December 2012 SAR (TY\$ M)

Appropriation	Prior	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	To Complete	Total
RDT&E	2226.1	14.3	0.0	0.0	0.0	0.0	0.0	0.0	2240.4
Procurement	4145.7	65.8	67.8	33.5	21.0	2.4	0.5	0.0	4336.7
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	6371.8	80.1	67.8	33.5	21.0	2.4	0.5	0.0	6577.1
PB 2013 Total	6397.0	80.3	85.5	15.8	2.4	0.4	0.0	0.0	6581.4
Delta	-25.2	-0.2	-17.7	17.7	18.6	2.0	0.5	0.0	-4.3

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	33	0	0	0	0	0	0	0	33
PB 2014 Total	0	33	0	0	0	0	0	0	0	33
PB 2013 Total	0	33	0	0	0	0	0	0	0	33
Delta	0	0	0	0	0	0	0	0	0	0

Funding Summary - USER EQUIPMENT

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

Appropriation	Prior	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	To Complete	Total
RDT&E	1389.1	29.6	0.0	0.0	0.0	0.0	0.0	0.0	1418.7
Procurement	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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 2014 Total	1389.1	29.6	0.0	0.0	0.0	0.0	0.0	0.0	1418.7
PB 2013 Total	1376.8	29.6	0.0	0.0	0.0	0.0	0.0	0.0	1406.4
Delta	12.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.3

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.

All procurement fund (Aircraft Procurement, Air Force and Other Procurement, Air Force) along with the Department of Defense (DoD) funds (Research Development Test and Evaluation (RDT&E)) have been removed from the Selected Acquisition Report (SAR). The User Equipment (UE) portion of the SAR only covers Modernized UE (MUE). All MUE activities are paid for by RDT&E, Air Force funds and thus we were incorrectly carrying the other funding.

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	0	0	0	0	0	0	0	0
PB 2014 Total	0	0	0	0	0	0	0	0	0	0
PB 2013 Total	0	0	0	0	0	0	0	0	0	0
Delta	0	0	0	0	0	0	0	0	0	0

Cost and Funding

Annual Funding By Appropriation - SPACE & CONTROL

Annual Funding TY\$ - SPACE & CONTROL

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
1986	--	--	--	--	--	--	1.2
1987	--	--	--	--	--	--	12.8
1988	--	--	--	--	--	--	13.8
1989	--	--	--	--	--	--	34.0
1990	--	--	--	--	--	--	22.2
1991	--	--	--	--	--	--	35.1
1992	--	--	--	--	--	--	36.2
1993	--	--	--	--	--	--	46.6
1994	--	--	--	--	--	--	24.1
1995	--	--	--	--	--	--	35.2
1996	--	--	--	--	--	--	43.2
1997	--	--	--	--	--	--	84.3
1998	--	--	--	--	--	--	96.7
1999	--	--	--	--	--	--	100.9
2000	--	--	--	--	--	--	93.2
2001	--	--	--	--	--	--	183.4
2002	--	--	--	--	--	--	183.6
2003	--	--	--	--	--	--	286.2
2004	--	--	--	--	--	--	132.5
2005	--	--	--	--	--	--	128.3
2006	--	--	--	--	--	--	174.5
2007	--	--	--	--	--	--	160.6
2008	--	--	--	--	--	--	110.2
2009	--	--	--	--	--	--	86.6
2010	--	--	--	--	--	--	50.5
2011	--	--	--	--	--	--	33.4

2012	--	--	--	--	--	--	16.8
2013	--	--	--	--	--	--	14.3
Subtotal	--	--	--	--	--	--	2240.4

Annual Funding BY\$ - SPACE & CONTROL**3600 | RDT&E | Research, Development, Test, and Evaluation, Air Force**

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2000 \$M	Non End Item Recurring Flyaway BY 2000 \$M	Non Recurring Flyaway BY 2000 \$M	Total Flyaway BY 2000 \$M	Total Support BY 2000 \$M	Total Program BY 2000 \$M
1986	--	--	--	--	--	--	1.7
1987	--	--	--	--	--	--	16.9
1988	--	--	--	--	--	--	17.8
1989	--	--	--	--	--	--	41.8
1990	--	--	--	--	--	--	26.5
1991	--	--	--	--	--	--	40.4
1992	--	--	--	--	--	--	40.4
1993	--	--	--	--	--	--	51.0
1994	--	--	--	--	--	--	25.9
1995	--	--	--	--	--	--	37.2
1996	--	--	--	--	--	--	44.8
1997	--	--	--	--	--	--	86.3
1998	--	--	--	--	--	--	98.3
1999	--	--	--	--	--	--	101.5
2000	--	--	--	--	--	--	92.4
2001	--	--	--	--	--	--	179.3
2002	--	--	--	--	--	--	177.6
2003	--	--	--	--	--	--	273.1
2004	--	--	--	--	--	--	123.4
2005	--	--	--	--	--	--	116.5
2006	--	--	--	--	--	--	153.8
2007	--	--	--	--	--	--	137.9
2008	--	--	--	--	--	--	92.7
2009	--	--	--	--	--	--	71.9
2010	--	--	--	--	--	--	41.4
2011	--	--	--	--	--	--	26.9
2012	--	--	--	--	--	--	13.2
2013	--	--	--	--	--	--	11.0
Subtotal	--	--	--	--	--	--	2141.6

Annual Funding TY\$ - SPACE & CONTROL
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
1987	--	--	--	--	--	2.6	2.6
1988	--	--	--	--	--	8.3	8.3
1989	--	--	--	--	--	--	--
1990	--	--	--	--	--	--	--
1991	--	--	--	--	--	--	--
1992	--	--	--	--	--	--	--
1993	--	--	--	--	--	5.5	5.5
1994	--	--	--	--	--	4.2	4.2
1995	--	--	--	--	--	4.9	4.9
1996	--	--	--	--	--	6.7	6.7
1997	--	--	--	--	--	10.6	10.6
1998	--	--	--	--	--	9.2	9.2
1999	--	--	--	--	--	6.4	6.4
2000	--	--	--	--	--	6.6	6.6
2001	--	--	--	--	--	14.7	14.7
2002	--	--	--	--	--	10.3	10.3
2003	--	--	--	--	--	20.0	20.0
2004	--	--	--	--	--	13.4	13.4
2005	--	--	--	--	--	7.8	7.8
2006	--	--	--	--	--	13.5	13.5
2007	--	--	--	--	--	10.3	10.3
2008	--	--	--	--	--	8.0	8.0
2009	--	--	--	--	--	5.3	5.3
2010	--	--	--	--	--	7.5	7.5
2011	--	--	--	--	--	7.7	7.7
2012	--	--	--	--	--	4.8	4.8
2013	--	--	--	--	--	7.7	7.7
2014	--	--	--	--	--	11.8	11.8
2015	--	--	--	--	--	13.2	13.2

2016	--	--	--	--	--	12.4	12.4
2017	--	--	--	--	--	2.4	2.4
2018	--	--	--	--	--	0.5	0.5
Subtotal	--	--	--	--	--	236.3	236.3

Annual Funding BY\$ - SPACE & CONTROL
3080 | Procurement | Other Procurement, Air Force

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2000 \$M	Non End Item Recurring Flyaway BY 2000 \$M	Non Recurring Flyaway BY 2000 \$M	Total Flyaway BY 2000 \$M	Total Support BY 2000 \$M	Total Program BY 2000 \$M
1987	--	--	--	--	--	3.3	3.3
1988	--	--	--	--	--	10.2	10.2
1989	--	--	--	--	--	--	--
1990	--	--	--	--	--	--	--
1991	--	--	--	--	--	--	--
1992	--	--	--	--	--	--	--
1993	--	--	--	--	--	5.9	5.9
1994	--	--	--	--	--	4.4	4.4
1995	--	--	--	--	--	5.1	5.1
1996	--	--	--	--	--	6.9	6.9
1997	--	--	--	--	--	10.7	10.7
1998	--	--	--	--	--	9.2	9.2
1999	--	--	--	--	--	6.3	6.3
2000	--	--	--	--	--	6.4	6.4
2001	--	--	--	--	--	14.1	14.1
2002	--	--	--	--	--	9.7	9.7
2003	--	--	--	--	--	19.1	19.1
2004	--	--	--	--	--	12.5	12.5
2005	--	--	--	--	--	7.1	7.1
2006	--	--	--	--	--	11.9	11.9
2007	--	--	--	--	--	8.9	8.9
2008	--	--	--	--	--	6.7	6.7
2009	--	--	--	--	--	4.4	4.4
2010	--	--	--	--	--	6.1	6.1
2011	--	--	--	--	--	6.2	6.2
2012	--	--	--	--	--	3.8	3.8
2013	--	--	--	--	--	6.0	6.0
2014	--	--	--	--	--	9.0	9.0
2015	--	--	--	--	--	9.8	9.8

2016	--	--	--	--	--	9.1	9.1
2017	--	--	--	--	--	1.7	1.7
2018	--	--	--	--	--	0.4	0.4
Subtotal	--	--	--	--	--	214.9	214.9

Annual Funding TY\$ - SPACE & CONTROL
3020 | Procurement | Missile 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
1991	--	79.8	--	7.9	87.7	--	87.7
1992	4	155.3	--	7.7	163.0	--	163.0
1993	4	151.9	--	8.7	160.6	--	160.6
1994	4	160.4	--	7.9	168.3	--	168.3
1995	5	198.8	--	8.8	207.6	--	207.6
1996	4	136.7	--	8.3	145.0	--	145.0
1997	3	179.1	--	9.1	188.2	--	188.2
1998	3	168.7	--	9.0	177.7	--	177.7
1999	--	69.5	--	10.9	80.4	--	80.4
2000	--	105.9	--	13.5	119.4	--	119.4
2001	--	152.1	--	13.5	165.6	--	165.6
2002	--	138.6	--	11.9	150.5	--	150.5
2003	--	270.8	--	13.4	284.2	--	284.2
2004	--	322.8	--	13.6	336.4	--	336.4
2005	3	352.5	--	13.8	366.3	--	366.3
2006	3	357.5	--	14.3	371.8	--	371.8
2007	--	91.1	--	14.4	105.5	--	105.5
2008	--	126.8	68.7	--	195.5	32.0	227.5
2009	--	80.0	21.1	--	101.1	41.0	142.1
2010	--	60.8	49.5	--	110.3	27.3	137.6
2011	--	0.2	25.2	--	25.4	38.9	64.3
2012	--	--	55.2	26.8	82.0	25.7	107.7
2013	--	--	11.5	2.1	13.6	44.5	58.1
2014	--	--	35.8	--	35.8	20.2	56.0
2015	--	--	18.1	--	18.1	2.2	20.3
2016	--	--	8.6	--	8.6	--	8.6
Subtotal	33	3359.3	293.7	215.6	3868.6	231.8	4100.4

Annual Funding BY\$ - SPACE & CONTROL
3020 | Procurement | Missile Procurement, Air Force

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2000 \$M	Non End Item Recurring Flyaway BY 2000 \$M	Non Recurring Flyaway BY 2000 \$M	Total Flyaway BY 2000 \$M	Total Support BY 2000 \$M	Total Program BY 2000 \$M
1991	--	88.4	--	8.8	97.2	--	97.2
1992	4	170.0	--	8.4	178.4	--	178.4
1993	4	163.0	--	9.3	172.3	--	172.3
1994	4	168.7	--	8.3	177.0	--	177.0
1995	5	207.2	--	9.1	216.3	--	216.3
1996	4	140.6	--	8.5	149.1	--	149.1
1997	3	181.6	--	9.3	190.9	--	190.9
1998	3	169.5	--	9.0	178.5	--	178.5
1999	--	68.9	--	10.9	79.8	--	79.8
2000	--	103.9	--	13.2	117.1	--	117.1
2001	--	147.6	--	13.1	160.7	--	160.7
2002	--	132.3	--	11.3	143.6	--	143.6
2003	--	255.5	--	12.6	268.1	--	268.1
2004	--	298.0	--	12.6	310.6	--	310.6
2005	3	316.4	--	12.4	328.8	--	328.8
2006	3	311.9	--	12.5	324.4	--	324.4
2007	--	77.5	--	12.3	89.8	--	89.8
2008	--	106.0	57.4	--	163.4	26.7	190.1
2009	--	65.9	17.4	--	83.3	33.8	117.1
2010	--	49.3	40.2	--	89.5	22.2	111.7
2011	--	0.2	20.0	--	20.2	30.8	51.0
2012	--	--	43.0	20.8	63.8	20.0	83.8
2013	--	--	8.7	1.6	10.3	33.5	43.8
2014	--	--	26.5	--	26.5	15.0	41.5
2015	--	--	13.1	--	13.1	1.6	14.7
2016	--	--	6.1	--	6.1	--	6.1
Subtotal	33	3222.4	232.4	204.0	3658.8	183.6	3842.4

Cost Quantity Information - SPACE & CONTROL
3020 | Procurement | Missile Procurement, Air Force

Fiscal Year	Quantity	End Item Recurring Flyaway (Aligned with Quantity) BY 2000 \$M
1991	--	--
1992	4	178.6
1993	4	178.6
1994	4	178.6
1995	5	223.4
1996	4	178.6
1997	3	576.8
1998	3	576.8
1999	--	--
2000	--	--
2001	--	--
2002	--	--
2003	--	--
2004	--	--
2005	3	565.5
2006	3	565.5
2007	--	--
2008	--	--
2009	--	--
2010	--	--
2011	--	--
2012	--	--
2013	--	--
2014	--	--
2015	--	--
2016	--	--
Subtotal	33	3222.4

Annual Funding By Appropriation - USER EQUIPMENT**Annual Funding TY\$ - USER EQUIPMENT****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
1994	--	--	--	--	--	--	1.1
1995	--	--	--	--	--	--	1.5
1996	--	--	--	--	--	--	9.3
1997	--	--	--	--	--	--	24.2
1998	--	--	--	--	--	--	34.2
1999	--	--	--	--	--	--	36.1
2000	--	--	--	--	--	--	32.2
2001	--	--	--	--	--	--	41.4
2002	--	--	--	--	--	--	36.4
2003	--	--	--	--	--	--	67.5
2004	--	--	--	--	--	--	92.1
2005	--	--	--	--	--	--	91.0
2006	--	--	--	--	--	--	111.7
2007	--	--	--	--	--	--	130.3
2008	--	--	--	--	--	--	154.6
2009	--	--	--	--	--	--	121.8
2010	--	--	--	--	--	--	131.6
2011	--	--	--	--	--	--	155.8
2012	--	--	--	--	--	--	116.3
2013	--	--	--	--	--	--	29.6
Subtotal	--	--	--	--	--	--	1418.7

Annual Funding BY\$ - USER EQUIPMENT**3600 | RDT&E | Research, Development, Test, and Evaluation, Air Force**

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2000 \$M	Non End Item Recurring Flyaway BY 2000 \$M	Non Recurring Flyaway BY 2000 \$M	Total Flyaway BY 2000 \$M	Total Support BY 2000 \$M	Total Program BY 2000 \$M
1994	--	--	--	--	--	--	1.2
1995	--	--	--	--	--	--	1.6
1996	--	--	--	--	--	--	9.6
1997	--	--	--	--	--	--	24.8
1998	--	--	--	--	--	--	34.8
1999	--	--	--	--	--	--	36.3
2000	--	--	--	--	--	--	31.9
2001	--	--	--	--	--	--	40.5
2002	--	--	--	--	--	--	35.2
2003	--	--	--	--	--	--	64.4
2004	--	--	--	--	--	--	85.7
2005	--	--	--	--	--	--	82.6
2006	--	--	--	--	--	--	98.4
2007	--	--	--	--	--	--	111.9
2008	--	--	--	--	--	--	130.1
2009	--	--	--	--	--	--	101.2
2010	--	--	--	--	--	--	107.9
2011	--	--	--	--	--	--	125.3
2012	--	--	--	--	--	--	91.6
2013	--	--	--	--	--	--	22.8
Subtotal	--	--	--	--	--	--	1237.8

Low Rate Initial Production

SPACE & CONTROL

Low Rate Initial Production (LRIP) is not applicable for the Space and Control program.

USER EQUIPMENT

Low Rate Initial Production (LRIP) is not applicable for the User Equipment program.

Foreign Military Sales

SPACE & CONTROL

None

USER EQUIPMENT

None

Nuclear Cost

SPACE & CONTROL

None

USER EQUIPMENT

None

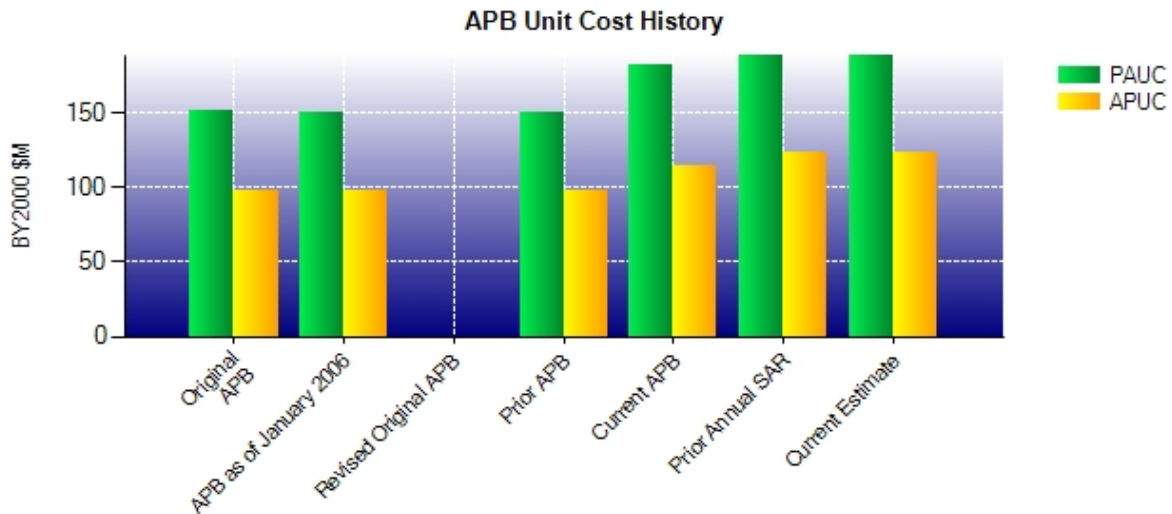
Unit Cost**SPACE & CONTROL****Unit Cost Report**

	BY2000 \$M	BY2000 \$M	
Unit Cost	Current UCR Baseline (FEB 2007 APB)	Current Estimate (DEC 2012 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	5987.7	6198.9	
Quantity	33	33	
Unit Cost	181.445	187.845	+3.53
Average Procurement Unit Cost (APUC)			
Cost	3768.6	4057.3	
Quantity	33	33	
Unit Cost	114.200	122.948	+7.66

	BY2000 \$M	BY2000 \$M	
Unit Cost	Original UCR Baseline (FEB 2002 APB)	Current Estimate (DEC 2012 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	5015.6	6198.9	
Quantity	33	33	
Unit Cost	151.988	187.845	+23.59
Average Procurement Unit Cost (APUC)			
Cost	3239.4	4057.3	
Quantity	33	33	
Unit Cost	98.164	122.948	+25.25

SPACE & CONTROL

Unit Cost History



	Date	BY2000 \$M		TY \$M	
		PAUC	APUC	PAUC	APUC
Original APB	FEB 2002	151.988	98.164	155.179	99.745
APB as of January 2006	FEB 2003	150.500	97.811	154.914	101.105
Revised Original APB	N/A	N/A	N/A	N/A	N/A
Prior APB	FEB 2003	150.500	97.811	154.914	101.105
Current APB	FEB 2007	181.445	114.200	191.152	120.539
Prior Annual SAR	DEC 2011	188.079	123.158	199.436	131.518
Current Estimate	DEC 2012	187.845	122.948	199.306	131.415

SAR Unit Cost History

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

Initial PAUC Prod Est	Changes								PAUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
155.179	1.076	-0.070	0.252	13.209	16.936	0.000	12.724	44.127	199.306

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

Initial APUC Prod Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
99.745	0.779	-0.069	0.252	2.815	14.848	0.000	13.045	31.670	131.415

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	N/A	N/A	N/A
Milestone III	N/A	N/A	JUN 1989	JUN 1989
IOC	N/A	N/A	N/A	N/A
Total Cost (TY \$M)	N/A	N/A	5120.9	6577.1
Total Quantity	N/A	N/A	33	33
Prog. Acq. Unit Cost (PAUC)	N/A	N/A	155.179	199.306

Milestone III represents the GPS IIR Contract Award milestone.

USER EQUIPMENT**Unit Cost Report**

	BY2000 \$M	BY2000 \$M	
Unit Cost	Current UCR Baseline (FEB 2007 APB)	Current Estimate (DEC 2012 SAR)	BY % Change

Program Acquisition Unit Cost (PAUC)

Cost	1688.5	1237.8	
Quantity	0	0	
Unit Cost	--	--	--

Average Procurement Unit Cost (APUC)

Cost	257.2	0.0	
Quantity	0	0	
Unit Cost	--	--	--

	BY2000 \$M	BY2000 \$M	
Unit Cost	Original UCR Baseline (FEB 2002 APB)	Current Estimate (DEC 2012 SAR)	BY % Change

Program Acquisition Unit Cost (PAUC)

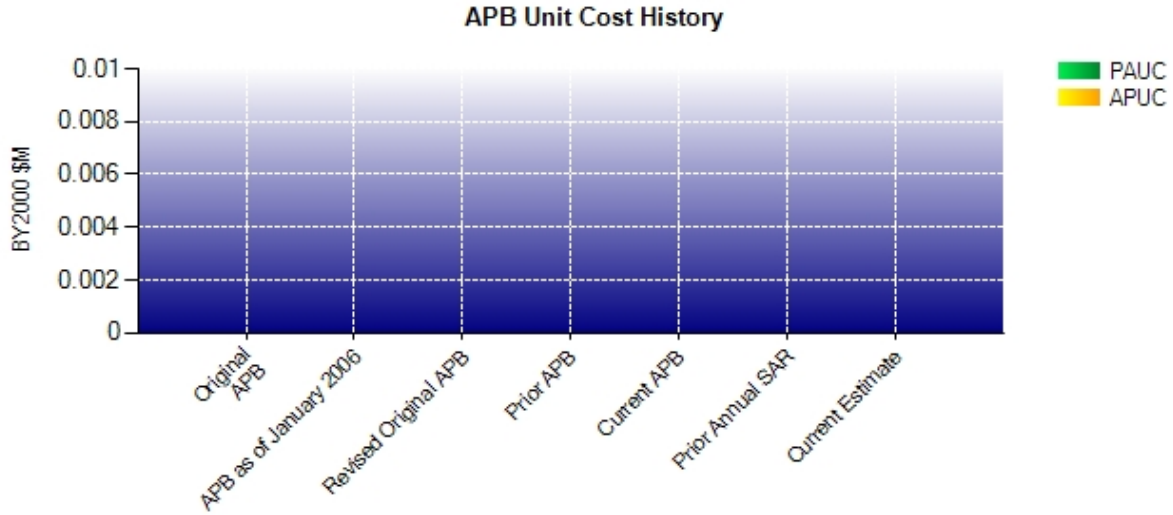
Cost	797.8	1237.8	
Quantity	0	0	
Unit Cost	--	--	--

Average Procurement Unit Cost (APUC)

Cost	254.3	0.0	
Quantity	0	0	
Unit Cost	--	--	--

USER EQUIPMENT

Unit Cost History



	Date	BY2000 \$M		TY \$M	
		PAUC	APUC	PAUC	APUC
Original APB	FEB 2002	N/A	N/A	N/A	N/A
APB as of January 2006	FEB 2003	N/A	N/A	N/A	N/A
Revised Original APB	N/A	N/A	N/A	N/A	N/A
Prior APB	FEB 2003	N/A	N/A	N/A	N/A
Current APB	FEB 2007	N/A	N/A	N/A	N/A
Prior Annual SAR	DEC 2011	N/A	N/A	N/A	N/A
Current Estimate	DEC 2012	N/A	N/A	N/A	N/A

SAR Unit Cost History

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

Initial PAUC Prod Est	Changes								PAUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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

Initial APUC Prod Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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	N/A	N/A	N/A
Milestone III	N/A	N/A	N/A	N/A
IOC	N/A	N/A	JAN 2002	JAN 2002
Total Cost (TY \$M)	N/A	874.4	874.4	1418.7
Total Quantity	N/A	N/A	0	0
Prog. Acq. Unit Cost (PAUC)	N/A	N/A	N/A	N/A

Cost Variance**SPACE & CONTROL**

Summary Then Year \$M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Prod Est)	1829.3	3291.6	--	5120.9
Previous Changes				
Economic	+9.7	+22.3	--	+32.0
Quantity	--	-2.3	--	-2.3
Schedule	--	+8.3	--	+8.3
Engineering	+343.0	+92.9	--	+435.9
Estimating	+69.9	+473.7	--	+543.6
Other	--	--	--	--
Support	-10.6	+453.6	--	+443.0
Subtotal	+412.0	+1048.5	--	+1460.5
Current Changes				
Economic	+0.1	+3.4	--	+3.5
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-1.0	+16.3	--	+15.3
Other	--	--	--	--
Support	--	-23.1	--	-23.1
Subtotal	-0.9	-3.4	--	-4.3
Total Changes	+411.1	+1045.1	--	+1456.2
CE - Cost Variance	2240.4	4336.7	--	6577.1
CE - Cost & Funding	2240.4	4336.7	--	6577.1

Summary Base Year 2000 \$M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Prod Est)	1776.2	3239.4	--	5015.6
Previous Changes				
Economic	--	--	--	--
Quantity	--	+20.0	--	+20.0
Schedule	--	--	--	--
Engineering	+320.7	+71.6	--	+392.3
Estimating	+55.9	+350.9	--	+406.8
Other	--	--	--	--
Support	-10.4	+382.3	--	+371.9
Subtotal	+366.2	+824.8	--	+1191.0
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-0.8	+10.5	--	+9.7
Other	--	--	--	--
Support	--	-17.4	--	-17.4
Subtotal	-0.8	-6.9	--	-7.7
Total Changes	+365.4	+817.9	--	+1183.3
CE - Cost Variance	2141.6	4057.3	--	6198.9
CE - Cost & Funding	2141.6	4057.3	--	6198.9

Previous Estimate: December 2011

RDT&E	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	+0.1
Adjustment for current and prior escalation. (Estimating)	-0.1	-0.1
Decrease due to Congressional reduction. (Estimating)	-0.7	-0.9
RDT&E Subtotal	-0.8	-0.9

Procurement	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	+3.4
Adjustment for current and prior escalation. (Estimating)	-0.3	-0.5
Below Threshold Reprogramming to GPS III for Technical Operating Report (TOR) Request for Equitable Adjustment (REA). (Estimating)	-12.9	-16.0
Reduction due to higher Air Force priorities. (Estimating)	-4.5	-5.6
Increased allocated budget to fund launch and checkout costs. (Estimating)	+5.1	+6.8
Increased allocated budget to sustain launch and checkout support. (Estimating)	+19.0	+26.4
Adjustment for current and prior escalation. (Support)	-0.8	-0.9
Increase in other support to fund modifications, antennas, master control stations and obsolescence issues. (Support)	+12.8	+17.3
Increase in Initial Spares. (Support)	+0.4	+0.5
Reclassification of funds from Support to Flyaway(-\$5.2); Decrease in Technical and On-Orbit support due to a change in the GPS IIF launch manifest schedule (-\$34.8M). (Subtotal)	-29.8	-40.0
Decrease in Technical and On-Orbit support due to a change in the GPS IIF launch manifest schedule. (Support)	(-25.7)	(-34.8)
Reclassification of funds from Support to Flyaway. (Support)	(-4.1)	(-5.2)
Reclassification of funds from Support to Flyaway. (Estimating)	+4.1	+5.2
Procurement Subtotal	-6.9	-3.4

Cost Variance**USER EQUIPMENT**

Summary Then Year \$M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Prod Est)	600.9	273.5	--	874.4
Previous Changes				
Economic	-1.9	+0.2	--	-1.7
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	+307.4	--	--	+307.4
Estimating	+500.0	+0.4	--	+500.4
Other	--	--	--	--
Support	--	-274.1	--	-274.1
Subtotal	+805.5	-273.5	--	+532.0
Current Changes				
Economic	+0.4	--	--	+0.4
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	+11.9	--	--	+11.9
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+12.3	--	--	+12.3
Total Changes	+817.8	-273.5	--	+544.3
CE - Cost Variance	1418.7	--	--	1418.7
CE - Cost & Funding	1418.7	--	--	1418.7

Summary Base Year 2000 \$M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Prod Est)	543.5	254.3	--	797.8
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	+274.6	--	--	+274.6
Estimating	+410.3	--	--	+410.3
Other	--	--	--	--
Support	--	-254.3	--	-254.3
Subtotal	+684.9	-254.3	--	+430.6
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	+9.4	--	--	+9.4
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+9.4	--	--	+9.4
Total Changes	+694.3	-254.3	--	+440.0
CE - Cost Variance	1237.8	--	--	1237.8
CE - Cost & Funding	1237.8	--	--	1237.8

Previous Estimate: December 2011

RDT&E	\$M	
	Base Year	Then Year
Current Change Explanations		
Revised escalation indices. (Economic)	N/A	+0.4
Adjustment for current and prior escalation. (Estimating)	-0.3	-0.4
Realignment of funds from Military GPS User Equipment (MGUE) to cover increased Modernized User Equipment (MUE) requirements. (Estimating)	+9.7	+12.3
RDT&E Subtotal	+9.4	+12.3

Contracts**Appropriation: RDT&E**

Contract Name	GPS IIF Space Production Lot 1
Contractor	The Boeing Company
Contractor Location	2201 Seal Beach Blvd. Seal Beach, CA 90740
Contract Number, Type	F04701-96-C-0025/3, CPAF
Award Date	April 22, 1996
Definitization Date	April 22, 1996

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
157.6	N/A	3	194.7	N/A	3	711.4	696.0

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (2/28/2013)	-254.8	-1.5
Previous Cumulative Variances	-235.9	-4.3
Net Change	-18.9	+2.8

Cost And Schedule Variance Explanations

The unfavorable net change in the cost variance is due to resolution/exoneration of various technical issues in the Bus Power System, Attitude Determination Control System, and Thermal Control System. Likewise, excessive out-gassing observed on Space Vehicle (SV)-7 necessitated investigation and exoneration on SV-3.

The favorable net change in the schedule variance is due to completion of the majority of final SV-3 work packages.

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 the GPS IIF satellite modernization contract rebaseline. This baseline implemented the direction given in the Acquisition Decision Memorandum dated May 2000. The current contract price is comprised of the baseline settlement funding adjustments for the actual work performed under the original baseline plus the final negotiated price for three modernized GPS IIF satellites (SV 1-3).

The contract information above pertains to the Block IIF Modernization 3020 Cost Plus Award Fee Production efforts for the first three space vehicles.

In December 2007, Boeing notified the government of their intention to implement an Over Target Baseline (OTB) for Space Vehicle (SV)1-3 production. With the government's concurrence, the "partial" OTB (for schedule only) was implemented in January 2008. This \$47.6M adjustment to schedule variance brought the Program Adjustment total to \$262.4M.

The new Budget at Completion (BAC) value after the March 2008 replan was \$434M which fully budgeted the contractor's estimate to complete. The new program management baseline was validated with an Integrated Baseline Review (IBR) in June 2008, although the government remained concerned about the schedule and allocation of management reserve due to additional schedule erosion that was reported after December 2007.

Since the June 2008 IBR, Boeing has submitted quarterly estimated price changes and the Government has updated its independent estimated price at completion to account for these changes. As of December 2012, the contractor is reporting an estimated price at completion of \$688.9M against a negotiated cost of \$172.3M. The Government has reduced the Program Manager estimated price at completion from \$702M in 2011 to \$689.0M for 2012.

Appropriation: Procurement

Contract Name	GPS IIF Sat Production SVs 4-6
Contractor	The Boeing Company
Contractor Location	Seal Beach, CA 90740
Contract Number, Type	F04701-96-C-0025/4, FPIF
Award Date	April 22, 1996
Definitization Date	September 05, 2003

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
145.8	169.1	3	151.0	171.7	3	151.0	171.7

Cost And Schedule Variance Explanations

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

General Contract Variance Explanation

The GPS IIF Sat Production Space Vehicles (SVs) 4-6 contract does not require Earned Value Management (EVM) as it is a Fixed Price Contract. The basis for not requiring EVM is predicated on the decision made in 1996 by the GPS program office. The program office has looked into adding EVM to this contract but the price of doing so greatly outweighed the benefits.

Contract Comments

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to changes in spacecraft configuration and design. Technical anomalies found during unit and system level testing drove upgrades in unit hardware to preserve mission assurance.

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

The Government is responsible for 70% of any costs over the Target cost (and the contractor pays 30%) up to the ceiling price.

Appropriation: Procurement

Contract Name	GPS IIF Sat Production SVs 7-9
Contractor	The Boeing Company
Contractor Location	Seal Beach, CA 90740
Contract Number, Type	F04701-96-C-0025/5, FPIF
Award Date	April 22, 1996
Definitization Date	October 31, 2003

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
174.3	192.2	3	189.4	209.9	3	209.9	209.9

Cost And Schedule Variance Explanations

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

General Contract Variance Explanation

The GPS IIF Sat Production SVs 7-9 contract does not require Earned Value Management (EVM) as it is a Fixed Price Contract. The basis for not requiring EVM is predicated on the decision made in 1996 by the GPS program office. The program office has looked into adding EVM to this contract but the price of doing so greatly outweighed the benefits.

Contract Comments

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to changes in spacecraft configuration and design. Technical anomalies found during unit and system level testing drove upgrades in unit hardware to preserve mission assurance.

The Government is responsible for 70% of any costs over the Target cost (and the contractor pays 30%) up to the ceiling price.

The Estimated Price at Completion increase is primarily due to a Crosslink Transponder and Data Unit modification (\$16.3M), anomaly resolution, and integration/execution issues (\$5.0M).

Appropriation: Procurement

Contract Name	GPS IIF Sat Production SVs 10-12
Contractor	The Boeing Company
Contractor Location	Seal Beach, CA 90740
Contract Number, Type	F04701-96-C-0025/6, FPIF
Award Date	April 22, 1996
Definitization Date	June 22, 2003

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
166.8	183.8	3	175.5	193.3	3	193.3	193.3

Cost And Schedule Variance Explanations

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

General Contract Variance Explanation

The GPS IIF Sat Production SVs10-12 contract does not require Earned Value Management (EVM) as it is a Fixed Price Contract. The basis for not requiring EVM is predicated on the decision made in 1996 by the GPS program office. The program office has looked into adding EVM to this contract but the price of doing so greatly outweighed the benefits.

Contract Comments

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to changes in spacecraft configuration and design. Technical anomalies found during unit and system level testing drove upgrades in unit hardware to preserve mission assurance.

The Current Contract Price Ceiling and Contractor Estimated Price at Completion changed due to an L1 Power Undefinitized Contract Action in February 2012.

The Government is responsible for 70% of any costs over the Target cost (and the contractor pays 30%) up to the ceiling price.

Appropriation: RDT&E

Contract Name	MUE RCD : Rockwell Collins
Contractor	Rockwell-Collins
Contractor Location	Cedar Rapids, IA 52498
Contract Number, Type	FA8807-06-C-0001, CPAF
Award Date	May 26, 2006
Definitization Date	May 26, 2006

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
82.3	N/A	31	160.8	N/A	31	126.3	130.6

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (3/31/2013)	-3.9	-0.3
Previous Cumulative Variances	-17.5	-0.6
Net Change	+13.6	+0.3

Cost And Schedule Variance Explanations

The favorable net change in the cost variance is due to the execution of Modernized User Equipment (MUE) Completion (MUE-C) contract and the execution of an Over Target Baseline (OTB) total value of approximately \$35M.

The favorable net change in the schedule variance is due to the OTB mentioned above. This contractor has maintained a slightly ahead of schedule stance since the OTB and MUE-C contract award January 2012.

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 Rockwell Collins employing a model-based software engineering tool, which was unfamiliar to their staff. This caused them to underestimate the software engineering level of effort in their proposal and created the need for more engineers than planned to be applied to the task. Also, extremely poor digital Application Specific Integrated Circuits fabrication yields caused insufficient available hardware to employ in system integration, which led to delays and additional unplanned cost. In addition, the MUE-C Effort has been included in the contract price.

The cumulative variances decreased primarily due to an Over Target Baseline (OTB) conducted during FY 2012.

The Current Contract Quantity value was not previously reported in the SAR due to an oversight. The original and current contract quantity is 31, which is the number of ground-based receivers delivered to the program office.

The Contractor's Estimated Price at Completion decreased from \$130.5M at the end of December 2011 to \$126.3M at the end of March 2013 due to the final negotiated cost of the Completion effort and the OTB value.

The Government's Estimated Price at Completion decreased from \$135.0M at the end of December 2011 to \$130.6M at the end of March 2013. This decrease is due to adequate execution of the baseline after the OTB.

The contract price changed from \$122.2M at the end of December 2011 to \$160.8M at the end of March 2013. An OTB along with MUE-C effort was awarded early in 2012 of approximately \$35M for Functional Qualification Test fixes and Interface Capabilities Document updates.

Appropriation: RDT&E

Contract Name **MUE: L-3**
 Contractor L-3 Communications Corporation
 Contractor Location 2 Federal Street
 Camden, NJ 08102-1004
 Contract Number, Type FA8807-06-C-0003, CPAF
 Award Date May 26, 2006
 Definitization Date May 26, 2006

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
32.5	N/A	31	152.8	N/A	31	140.8	146.1

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (3/31/2013)	0.0	-0.2
Previous Cumulative Variances	-18.2	0.0
Net Change	+18.2	-0.2

Cost And Schedule Variance Explanations

The favorable net change in the cost variance is due to the execution of an Over Target Baseline (OTB) total value of approximately \$23M.

The unfavorable net change in the schedule variance is due to delays in board layout activities on Modernized User Equipment (MUE) Completion (MUE-C) efforts.

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 engineering issues reported in the previous SAR.

The increased variances reported in the Contractor Comments section of this report are mainly attributable to an inscope contract modification referred to as the MUE-C effort. This in-scope effort is to address deficiencies identified during contractor functional qualification tests and to address updates to the system specification. Variances were reset after the Over Target Baseline (OTB)/Integrated Baseline Review in June 2012.

The Current Contract Quantity value was not previously reported in the SAR due to an oversight. The original and current contract quantity is 31, which is the number of ground-based receivers delivered to the program office.

The Contractor's Estimated Price at Completion increased from \$120.3M at the end of December 2011 to \$140.8M at the end of March 2013. The increase is due to resulting final negotiations for the MUE-C efforts.

The Government's Estimated Price at Completion increased from \$124.5M at the end of December 2011 to \$146.1M at the end of March 2013. This increase incorporates the MUE-C effort as well as capture the latest contractor's factored risks and additional software growth.

The contract price changed from \$123.6M at the end of December 2011 to \$152.8M at the end of March 2013 due an OTB along with MUE-C effort that was awarded early in 2012 of approximately \$23M for Functional Qualification Testfixes and Interface Capabilities Documentupdates.

The initial contract Price was corrected from \$77.4M to \$32.5M to reflect the End of Month November 2007 Contract Performance Report (earliest archived).

Appropriation: RDT&E

Contract Name	MUE: Raytheon
Contractor	Raytheon Company
Contractor Location	2000 East El Segundo Blvd El Segundo, CA 90245-3507
Contract Number, Type	FA8807-06-C-0004, CPAF
Award Date	May 26, 2006
Definitization Date	May 26, 2006

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
40.3	N/A	62	163.8	N/A	62	153.9	159.7

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (3/31/2013)	-2.7	-1.0
Previous Cumulative Variances	-17.9	-0.2
Net Change	+15.2	-0.8

Cost And Schedule Variance Explanations

The favorable net change in the cost variance is due to the Over-Target Baseline (OTB) conducted during FY 2012.

The unfavorable net change in the schedule variance is due to the contractor running slightly behind on multiple tasks and is negligible at this time.

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 unexpected problems with their cryptography design in preparation for their Ground Based-GPS Receiver Application Module-Standard Electronic Module Test Readiness Review caused delay and additional subcontractor costs. Previously, Raytheon experienced difficulty with their digital Application Specific Integrated Circuit requiring rework.

The Contractor's Estimated Price at Completion of \$114.3M at the end of December 2011 increased to \$153.9M at the end of March 2013. This increase is due to the inclusion of the Modernized User Equipment (MUE) Completion (MUE-C) final negotiations along with an OTB valued at approx \$35M.

The Government's Estimated Price at Completion of \$117.7M at the end of December 2011 increased to \$159.7M at the end of March 2013.

The Current Contract Quantity value was not previously reported in the SAR due to an oversight. The original and current contract quantity is 62, which includes the 31 ground-based receivers and 31 aviation receivers delivered to the program office.

The contract price changed from \$132.1M at the end of December 2011 to \$163.8M at the end of March 2013. An OTB along with MUE-C effort was awarded early in 2012 of approximately \$35M for Functional Qualification Testfixes and Interface Capabilities Document updates.

The initial contract Price was corrected from \$105.7M to \$40.3M to reflect the end of November 2007 Contractor Performance Report (earliest archived).

Deliveries and Expenditures

SPACE & CONTROL

Deliveries To Date	Plan To Date	Actual To Date	Total Quantity	Percent Delivered
Development	0	0	0	--
Production	33	27	33	81.82%
Total Program Quantities Delivered	33	27	33	81.82%

Expenditures and Appropriations (TY \$M)

Total Acquisition Cost	6577.1	Years Appropriated	28
Expenditures To Date	5365.3	Percent Years Appropriated	84.85%
Percent Expended	81.58%	Appropriated to Date	6451.9
Total Funding Years	33	Percent Appropriated	98.10%

The above data is current as of 2/20/2013.

USER EQUIPMENT

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

Expenditures and Appropriations (TY \$M)

Total Acquisition Cost	1418.7	Years Appropriated	20
Expenditures To Date	1357.3	Percent Years Appropriated	100.00%
Percent Expended	95.67%	Appropriated to Date	1418.7
Total Funding Years	20	Percent Appropriated	100.00%

The above data is current as of 2/20/2013.

Operating and Support Cost

SPACE & CONTROL

Assumptions and Ground Rules

Cost Estimate Reference:

None

Sustainment Strategy:

Operating and Support (O&S) costs include all costs of operating, maintaining, and supporting the Navstar Global Positioning System (GPS) spacecraft from the dedicated Master Control Station (MCS) located at Schriever Air Force Base (AFB), Colorado (CO) and the Alternate MCS (AMCS) located at Vandenberg AFB, California (CA). Also included are the costs of operating, maintaining, and supporting four dedicated GPS Ground Antennas (GAs) (located at Cape Canaveral Air Force Station (AFS), Florida (FL), Kwajalein Atoll, the Ascension Islands, and Diego Garcia); and six monitor stations (located at Schriever AFB, Maui, HI, Cape Canaveral, Kwajalein Atoll, the Ascension Islands, and Diego Garcia). Satellite operations at the MCS include mission planning, mission payload operations, and monitoring of satellite state of health. GAs transmit navigation data uploads and commands to the GPS spacecraft, and receive telemetry data from the spacecraft. Monitor stations receive mission payload data and transfer this data to the MCS to ensure spacecraft are operating as desired. These costs do not include the unallocated costs associated with the shared use of remote tracking stations, which are programmed and funded by the Air Force Satellite Control Network program elements. Costs reflect updates as of December 31, 2012.

The total O&S costs for the Space and Control system are not calculable in a manner that is relevant for comparison to other space systems, as each element within the system has a different life cycle and associated upgrade, repair, and/or replacement sustainment cycle.

The O&S budget is derived by collecting the United States Air Force (USAF) Force and Financial plan dollars in 3400 and 3080. These dollars, combined with the 3400 Depot Purchased Equipment Maintenance and Logistics Commodities make up our total O&S costs. The O&S costs are calculated taking a combination of actuals to date and programmatic funding/budget amounts from FY 2010-2018.

Antecedent Information:

None

Unitized O&S Costs BY2000 \$M		
Cost Element	SPACE & CONTROL Avg Annual Cost for 24-Sat Constellation	Block I/II Legacy (Antecedent) Avg Annual Cost for 24-Sat Constellation
Unit-Level Manpower	27.5	19.2
Unit Operations	0.0	0.0
Maintenance	27.5	16.8
Sustaining Support	6.9	2.4
Continuing System Improvements	0.0	0.0
Indirect Support	6.9	2.4
Other	0.0	0.0
Total	68.8	40.8

Unitized Cost Comments:

The costs are calculated in the following manner:

The total cost per year is comprised of adding the 3400 and 3080 funds together. This year total is divided by 24 to get a per satellite cost (24 Satellite constellation). That number is then split into the four categories at the following percentages: Unit-Level Manpower 40%, Maintenance 40%, Sustaining Support 10%, Indirect Support 10%.

Once each cost element is calculated for the years in the SAR, an average of those 9 years is taken. The average is then multiplied back by 24 to get the cost of the 24 Satellite Constellation.

	Total O&S Cost \$M			
	Current Production APB Objective/Threshold		Current Estimate	
	SPACE & CONTROL		SPACE & CONTROL	Block I/II Legacy (Antecedent)
Base Year	0.0	0.0	619.0	N/A
Then Year	0.0	N/A	820.4	N/A

Total O&S Costs Comments:

The current O&S budget matches the FY 2014 President's Budget (PB) while the previous SARs did not fully report the PB.

Disposal Costs

None

USER EQUIPMENT

Assumptions and Ground Rules

Cost Estimate Reference:

None

Sustainment Strategy:

The Modernized User Equipment program will not procure user equipment, but will instead develop User Equipment enabling technologies, demonstrate solutions, deliver prototypes, and assist platform managers.

Antecedent Information:

None

Unitized O&S Costs BY2000 \$M			
Cost Element	USER EQUIPMENT	Antecedent System (Antecedent)	
Unit-Level Manpower	0		0
Unit Operations	0		0
Maintenance	0		0
Sustaining Support	0		0
Continuing System Improvements	0		0
Indirect Support	0		0
Other	0		0
Total	--		--

Unitized Cost Comments:

None

	Total O&S Cost \$M			
	Current Production APB Objective/Threshold		Current Estimate	
	USER EQUIPMENT	USER EQUIPMENT	Antecedent System (Antecedent)	
Base Year	0.0	0.0	N/A	N/A
Then Year	0.0	N/A	N/A	N/A

Total O&S Costs Comments:

None

Disposal Costs

None