Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-292

GPS IIIA

As of December 31, 2010

Defense Acquisition Management
Information Retrieval
(DAMIR)

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Program Information

Designation And Nomenclature (Popular Name)

Global Positioning System (GPS) IIIA

DoD Component

Air Force

Responsible Office

Responsible Office

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References

SAR Baseline (Development Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated May 8, 2008

Approved APB

DAE Approved Acquisition Program Baseline (APB) dated January 31, 2011

Mission and Description

GPS is a satellite-based radio navigation system that provides worldwide military and civil users satellite signals they can process to determine accurate position, velocity, and time. On May 8, 2000, the USD(AT&L) approved entry into the initial modernization efforts for Navstar GPS. GPS III is the next generation space vehicle (SV) that will provide significant enhancements to complete the modernization of the constellation. GPS III complies with 10 United States Code (USC) § 2281, ensuring the continued sustainment and operation of GPS for military and civilian purposes, and 42 USC § 14712, continuing as an international standard available on a continuous worldwide basis free of direct user fees.

The GPS Wing will deliver GPS III satellites in three increments: IIIA, IIIB and IIIC. As captured in a July 23, 2007 Memorandum, the Joint Requirement Oversight Council (JROC) validated and endorsed the GPS III Capability Development Document Increment A, thereby validating the requirements for the GPS IIIA program.

GPS IIIA satellites provide the existing capabilities of the GPS II constellation which consists of several military acquisitions to satisfy military and civil requirements: GPS II, IIA, IIR, Modernized IIR (IIR-M), and IIF. GPS II, IIA and IIR provide basic PNT, civil signal (L1 C/A), Standard Positioning Service, Precise Positioning Service (L1 & L2 P (Y)), and support to the United States Nuclear Detonation (NUDET) Detection System (NDS). GPS IIR-M provides a second civil signal (L2C), Military-code signals (L1M & L2M), and flexible anti-jam power (+7dB). GPS IIF will provide an additional third civil signal (L5).

In addition to these existing capabilities, GPS IIIA satellites provide increased anti-jam power to the earth coverage M-code signals for military users. GPS IIIA satellites will also transmit a new civil signal (L1C), which is compatible with the European Galileo satellite navigation system signal, E1. L1C is also compatible with those signals planned for broadcast on Japan's Quazi-Zenith Satellite System (QZSS), a system meant to augment GPS services. Once implemented, the common civil signal will be jointly broadcast by up to 60 satellites from both GPS and Galileo constellations, further increasing the accuracy and availability of user Position Navigation and Timing (PNT) solutions. In addition, the program will initiate a capability insertion plan to develop, qualify, integrate, demonstrate, and insert future capabilities using a low-risk, high confidence growth path.

The primary GPS IIIA missions are positioning, navigation, and precise time transfer. Via a hosted payload, the program will also support the NDS mission for worldwide monitoring and detection of nuclear events. GPS provides strategic and tactical support to the following Department of Defense (DoD) missions: Joint Operations by providing capabilities for PNT; Command, Control, Communications, and Intelligence; Special Operations; Military Operations in Urban Terrain; Defense-Wide Mission Support; Air Mobility; and Space Launch Orbital Support. GPS provides Precise Positioning Service (PPS) to military operations and force enhancement, anti-exploitation techniques to prevent unauthorized use of the GPS PPS signal, and Standard Positioning Service (SPS) to a broad spectrum of civil users.

Executive Summary

Global Positioning System (GPS) IIIA successfully completed its Space Vehicle (SV) Critical Design Review (CDR), August 16-19, 2010. This significant milestone demonstrated that the detailed design meets all Key Performance Parameter (KPP) requirements and is producible.

As a result of successful CDR completion, GPS IIIA has proceeded into its manufacturing process and is on track to meet the Acquisition Program Baseline (APB) milestone of 1st SV available for launch in May 2014. The manufacturing phase ensures the processes, resources and facilities are ready to assemble, integrate and test the space vehicle.

The program office submitted a Fiscal Year (FY)10 Above Threshold Reprogramming (ATR). FY10 funds were secured and the GPS IIIA SVs 3 & 4 advanced procurement was awarded before the contract option expired on December 23, 2010. An Air Force/General Council opinion on the Bona Fide Need Law prevented the program office from procuring long lead material for other vehicles. As a result, options for SVs 5-8 advanced procurement and production have expired. The program office will renegotiate the contract, which may lead to a 12-month schedule slip and a significant cost increase. In preparation for the Annual GPS Enterprise Review (AGER), GPS III successfully completed an Independent Program Assessment review, an Air Force Review Board, and an Overarching Integrated Product Team (OIPT) review. The AGER was held on December 17, 2010 and the subsequent January 31, 2011 Acquisition Decision Memorandum (ADM) granted Milestone C approval.

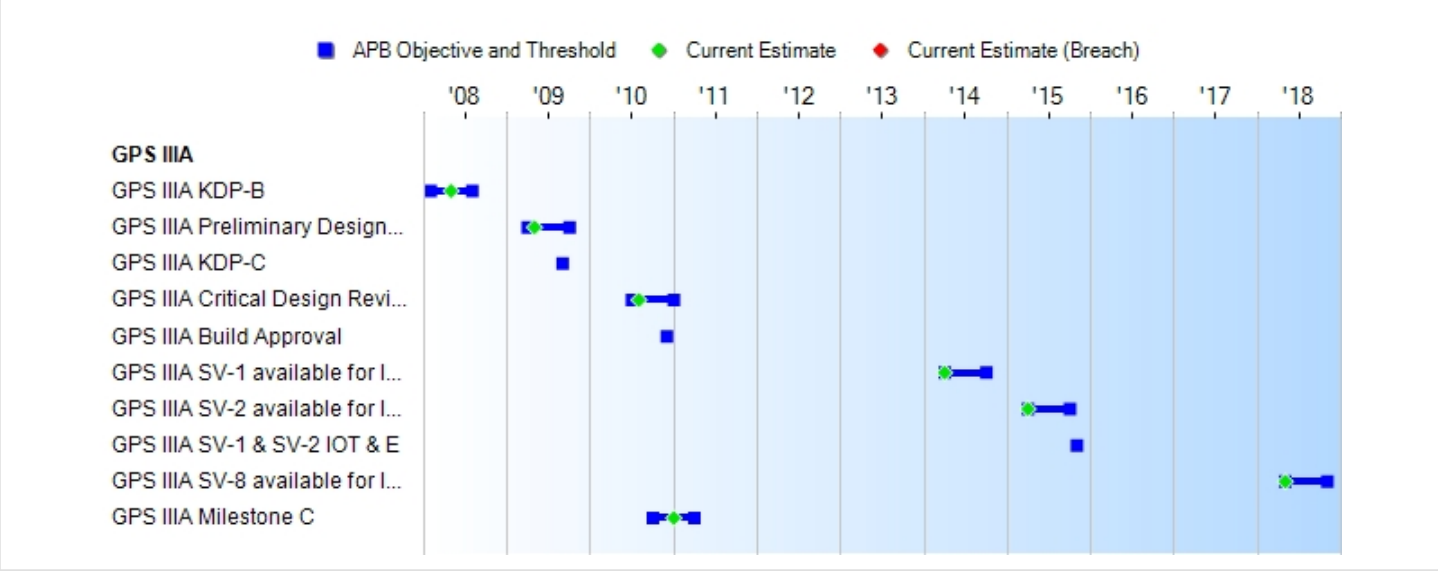
The program does not have any significant software issues at this time.

Threshold Breaches

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

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

Schedule



Milestones	SAR Baseline Dev Est	Current APB Production Objective/Threshold		Current Estimate	
GPS IIIA KDP-B	FEB 2008	FEB 2008	AUG 2008	MAY 2008	
GPS IIIA Preliminary Design Review	APR 2009	APR 2009	OCT 2009	MAY 2009	
GPS IIIA KDP-C	SEP 2009	N/A	N/A	N/A	(Ch-2)
GPS IIIA Critical Design Review	JUL 2010	JUL 2010	JAN 2011	AUG 2010	(Ch-1)
GPS IIIA Build Approval	DEC 2010	N/A	N/A	N/A	(Ch-2)
GPS IIIA SV-1 available for launch	APR 2014	APR 2014	OCT 2014	APR 2014	(Ch-4)
GPS IIIA SV-2 available for launch	APR 2015	APR 2015	OCT 2015	APR 2015	(Ch-4)
GPS IIIA SV-1 & SV-2 IOT & E	NOV 2015	N/A	N/A	N/A	(Ch-3)
GPS IIIA SV-8 available for launch	DEC 2017	MAY 2018	NOV 2018	MAY 2018	(Ch-5)
GPS IIIA Milestone C	N/A	OCT 2010	APR 2011	JAN 2011	(Ch-2)

Acronyms And Abbreviations

CDR - Critical Design Review
GPS - Global Positioning System
IOT&E - Initial Operational Test & Evaluation
KDP - Key Decision Point
SV - Space Vehicle

Change Explanations

(Ch-1) The current estimate changed from October 2010 to August 2010 because the Critical Design Review was accomplished two months ahead of schedule.

(Ch-2) These milestones are now N/A per the decision of the January 2010 Annual GPS Enterprise Review (AGER), and as directed in the May 24, 2010 Aquisition Decision Memorandum (ADM). GPS IIIA will no longer require a Build Approval consistent with the new DoDI 5000.02 and it will be replaced by a follow-on Production Decision Review. In addition, Key Decision Point-C (KDP-C) will be replaced by Milestone-C (MS-C).

(Ch-3) The Space Vehicle (SV)-1 and SV-2 Initial Operational Test and Evaluation (IOT&E) milestone will be removed as per the January 31, 2011 ADM signed at the AGER.

(Ch-4) The current estimate dates changed from May 2014 to April 2014 and from January 2015 to April 2015 to coincide with the objective dates of the recently signed MS-C APB.

(Ch-5) The current estimate date changed from December 2017 to May 2018 because of the new Fiscal year (FY) 12 President's Budget (PB) buy schedule in FY 2012-2014 (from 3-2-1 to 2-2-2). This moved SV-8 availability to the right to May 2018.

Performance

Characteristics	SAR Baseline Dev Est	Current APB Production Objective/Threshold		Demonstrated Performance	Current Estimate	
Backward Compatibility	All modifications made to the existing GPS Space Segment and Control Segment shall allow continued operation of existing ICD-GPS-200 and 700, IS-GPS-705, and SS-GPS-001 compliant User Equipment (UE) and continued operation of legacy receivers (to include Federal augmentation system receivers).	All modifications made to the existing GPS Space Segment and Control Segment shall allow continued operation of existing ICD-GPS-200 and 700, IS-GPS-705, and SS-GPS-001 compliant User Equipment (UE) and continued operation of legacy receivers (to include Federal augmentation system receivers).	All modifications made to the existing GPS Space Segment and Control Segment shall allow continued operation of existing ICD-GPS-200 and 700, IS-GPS-705, and SS-GPS-001 compliant User Equipment (UE) and continued operation of legacy receivers (to include Federal augmentation system receivers).	TBD	All modifications made to the existing GPS Space Segment and Control Segment shall allow continued operation of existing ICD-GPS-200 and 700, IS-GPS-705, and SS-GPS-001 compliant UE and continued operation of legacy receivers (to include Federal augmentation system receivers).	
User Range Error (meters)	.2	.2	1.1	TBD	1	
Position and Time Transfer Integrity	0.00000001	N/A	N/A	N/A	N/A	(Ch-1)
Net-Ready	The system must fully support execution of all joint operational activities identified in the applicable joint and system	The system must fully support execution of all joint operational activities identified in the applicable joint and system	The system must fully support execution of joint critical operational activities identified in the applicable joint and system	TBD	The system must fully support execution of all joint operational activities identified in the applicable joint and system	

	integrated architectures and the system must satisfy the technical requirements for Net-Centric military operations.	integrated architectures and the system must satisfy the technical requirements for Net-Centric military operations.	integrated architectures and the system must satisfy the technical requirements for transition to Net-Centric military operations.		integrated architectures and the system must satisfy the technical requirements for Net-Centric military operations.	
Satellite Availability	0.984	0.984	0.984	TBD	.984	
Boosted Earth-Coverage M-Code Power (dBW)	-148	-148	-153	TBD	-153	
Minimum L1C Signal Power	-157	-157	-157	TBD	-157	
Position and Time Transfer Integrity (Probability of Misleading SIS Information)	N/A	0.00000001	0.00001	TBD	0.00000001	(Ch-1)

Requirements Source:
The CDD for Increment A was approved by JROCM 230-06 dated November 6, 2006

Acronyms And Abbreviations

dBW - Decibel-watt
GPS - Global Positioning System
ICD - Interface Control Document
IS - Interface Specifications
SIS - Signal in Space
SS - System Specifications

Change Explanations

(Ch-1) The Position and Time Transfer Integrity characteristic was replaced by the Position and Time Transfer Integrity (Probability of Misleading Signal in Space (SIS) Information) characteristic in the January 31, 2011 approved Milestone-C Acquisition Program Baseline.

Track To Budget

RDT&E				
APPN 3600	BA 07	PE 0305265F	(Air Force)	
	Project 67A019		(Shared)	
APPN 3600	BA 04	PE 0603421F	(Air Force)	
	Project 644993			(Sunk)

The shared funding line supports both the Next Generation Operational Control Segment (OCX) and GPS III programs.

Procurement			
APPN 3020	BA 05	PE 0305265F	(Air Force)
	ICN GPSIII		(Shared)

Cost and Funding

Cost Summary

Total Acquisition Cost and Quantity

	BY2010 $M			BY2010 $M	TY $M		
Appropriation	SAR Baseline Dev Est	Current APB Production Objective/Threshold		Current Estimate	SAR Baseline Dev Est	Current APB Production Objective	Current Estimate
RDT&E	2459.8	2623.9	2886.3	2623.4	2512.0	2653.8	2654.1
Procurement	1381.0	1519.0	1670.9	1594.2	1490.3	1616.0	1696.0
Flyaway	1292.3	--	--	1594.2	1393.1	--	1696.0
Recurring	1283.0	--	--	1594.2	1382.9	--	1696.0
Non Recurring	9.3	--	--	0.0	10.2	--	0.0
Support	88.7	--	--	0.0	97.2	--	0.0
Other Support	88.7	--	--	0.0	97.2	--	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	3840.8	4142.9	N/A	4217.6	4002.3	4269.8	4350.1

The base year of the program has changed from BY00 to BY10 as a result of the approval of the Milestone-C (MS-C) Acquisition Program Baseline (APB) on January 21, 2011.

The MS-C APB was established at the 60% confidence level. A requirement to develop cost estimates and provide financial resources to programs at an 80% confidence level implies that the Directorate would program and budget excess resources that are not needed for successful completion of the program in approximately 4 of 5 cases. This approach to programming and budgeting of limited resources would be very inefficient for the Department of Defense which manages a portfolio of approximately one-hundred major defense acquisition programs. This estimate is built upon a product-oriented work breakdown structure, based on historical actual cost information to the maximum extent possible, and most importantly, based on conservative assumptions that are consistent with actual demonstrated contractor and government performance for a series of acquisition programs in which the Directorate has been successful.

Quantity	SAR Baseline Dev Est	Current APB Production	Current Estimate
RDT&E	2	2	2
Procurement	6	6	6
Total	8	8	8

Cost and Funding

Funding Summary

Appropriation and Quantity Summary
FY2012 President's Budget / December 2010 SAR (TY$ M)

Appropriation	Prior	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	To Complete	Total
RDT&E	1288.8	416.2	459.4	279.3	123.0	37.6	15.2	34.6	2654.1
Procurement	80.0	122.5	506.4	497.5	409.9	8.3	30.9	40.5	1696.0
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 2012 Total	1368.8	538.7	965.8	776.8	532.9	45.9	46.1	75.1	4350.1
PB 2011 Total	1358.2	568.8	1009.0	784.3	340.5	64.9	16.7	64.5	4206.9
Delta	10.6	-30.1	-43.2	-7.5	192.4	-19.0	29.4	10.6	143.2

Quantity	Undistributed	Prior	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	To Complete	Total
Development	2	0	0	0	0	0	0	0	0	2
Production	0	0	0	2	2	2	0	0	0	6
PB 2012 Total	2	0	0	2	2	2	0	0	0	8
PB 2011 Total	2	0	0	3	2	1	0	0	0	8
Delta	0	0	0	-1	0	1	0	0	0	0

Cost and Funding

Annual Funding By Appropriation

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

Fiscal Year	Quantity	End Item Recurring Flyaway TY $M	Non End Item Recurring Flyaway TY $M	Non Recurring Flyaway TY $M	Total Flyaway TY $M	Total Support TY $M	Total Program TY $M
2002	--	--	--	--	--	--	51.5
2003	--	--	--	--	--	--	39.7
2004	--	--	--	--	--	--	--
2005	--	--	--	--	--	--	21.2
2006	--	--	--	--	--	--	51.4
2007	--	--	--	--	--	--	195.2
2008	--	--	--	--	--	--	189.6
2009	--	--	--	--	--	--	354.0
2010	--	--	--	--	--	--	386.2
2011	--	--	--	--	--	--	416.2
2012	--	--	--	--	--	--	459.4
2013	--	--	--	--	--	--	279.3
2014	--	--	--	--	--	--	123.0
2015	--	--	--	--	--	--	37.6
2016	--	--	--	--	--	--	15.2
2017	--	--	--	--	--	--	11.5
2018	--	--	--	--	--	--	5.0
2019	--	--	--	--	--	--	2.4
2020	--	--	--	--	--	--	2.4
2021	--	--	--	--	--	--	2.4
2022	--	--	--	--	--	--	2.4
2023	--	--	--	--	--	--	2.4
2024	--	--	--	--	--	--	2.4
2025	--	--	--	--	--	--	2.4
2026	--	--	--	--	--	--	1.3
Subtotal	**2**	**--**	**--**	**--**	**--**	**--**	**2654.1**

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

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2010 $M	Non End Item Recurring Flyaway BY 2010 $M	Non Recurring Flyaway BY 2010 $M	Total Flyaway BY 2010 $M	Total Support BY 2010 $M	Total Program BY 2010 $M
2002	--	--	--	--	--	--	60.1
2003	--	--	--	--	--	--	45.7
2004	--	--	--	--	--	--	--
2005	--	--	--	--	--	--	23.2
2006	--	--	--	--	--	--	54.6
2007	--	--	--	--	--	--	202.1
2008	--	--	--	--	--	--	192.4
2009	--	--	--	--	--	--	354.8
2010	--	--	--	--	--	--	383.1
2011	--	--	--	--	--	--	407.3
2012	--	--	--	--	--	--	442.9
2013	--	--	--	--	--	--	264.9
2014	--	--	--	--	--	--	114.7
2015	--	--	--	--	--	--	34.5
2016	--	--	--	--	--	--	13.7
2017	--	--	--	--	--	--	10.2
2018	--	--	--	--	--	--	4.4
2019	--	--	--	--	--	--	2.1
2020	--	--	--	--	--	--	2.0
2021	--	--	--	--	--	--	2.0
2022	--	--	--	--	--	--	2.0
2023	--	--	--	--	--	--	1.9
2024	--	--	--	--	--	--	1.9
2025	--	--	--	--	--	--	1.9
2026	--	--	--	--	--	--	1.0
Subtotal	**2**	**--**	**--**	**--**	**--**	**--**	**2623.4**

Annual Funding TY$
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
2010	--	80.0	--	--	80.0	--	80.0
2011	--	122.5	--	--	122.5	--	122.5
2012	2	506.4	--	--	506.4	--	506.4
2013	2	497.5	--	--	497.5	--	497.5
2014	2	409.9	--	--	409.9	--	409.9
2015	--	8.3	--	--	8.3	--	8.3
2016	--	30.9	--	--	30.9	--	30.9
2017	--	23.2	--	--	23.2	--	23.2
2018	--	17.3	--	--	17.3	--	17.3
Subtotal	**6**	**1696.0**	**--**	**--**	**1696.0**	**--**	**1696.0**

Annual Funding BY$
3020 | Procurement | Missile Procurement, Air Force

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2010 $M	Non End Item Recurring Flyaway BY 2010 $M	Non Recurring Flyaway BY 2010 $M	Total Flyaway BY 2010 $M	Total Support BY 2010 $M	Total Program BY 2010 $M
2010	--	78.6	--	--	78.6	--	78.6
2011	--	118.6	--	--	118.6	--	118.6
2012	2	482.6	--	--	482.6	--	482.6
2013	2	466.4	--	--	466.4	--	466.4
2014	2	377.8	--	--	377.8	--	377.8
2015	--	7.5	--	--	7.5	--	7.5
2016	--	27.5	--	--	27.5	--	27.5
2017	--	20.3	--	--	20.3	--	20.3
2018	--	14.9	--	--	14.9	--	14.9
Subtotal	**6**	**1594.2**	**--**	**--**	**1594.2**	**--**	**1594.2**

Cost Quantity Information
3020 | Procurement | Missile Procurement, Air Force

Fiscal Year	Quantity	End Item Recurring Flyaway (Aligned with Quantity) BY 2010 $M
2010	--	--
2011	--	--
2012	2	531.4
2013	2	531.4
2014	2	531.4
2015	--	--
2016	--	--
2017	--	--
2018	--	--
Subtotal	**6**	**1594.2**

Low Rate Initial Production

There is no LRIP for this program.

Foreign Military Sales

There are no Foreign Military Sales data to display.

Nuclear Cost

There are no Nuclear Cost data to display.

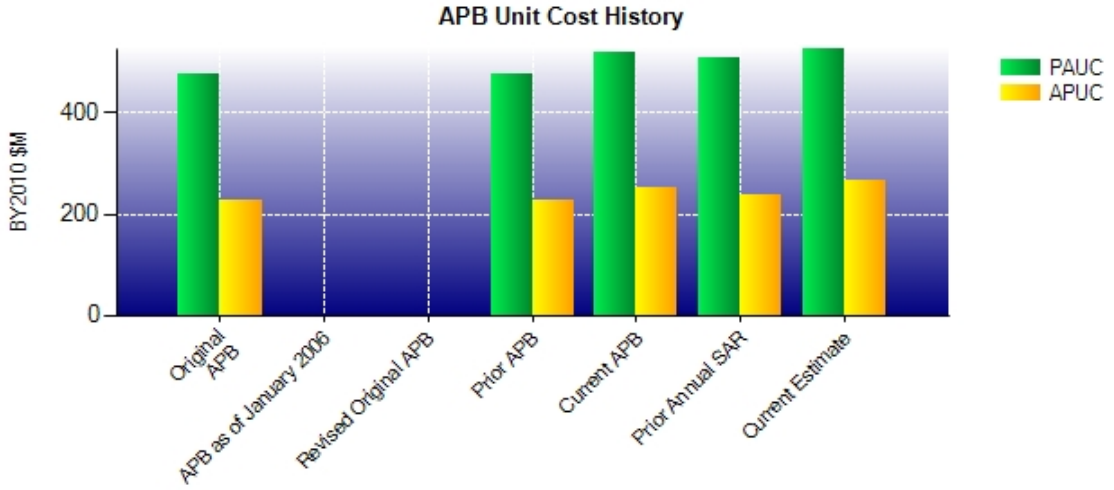
Unit Cost

Unit Cost Report

Unit Cost	BY2010 $M Current UCR Baseline (JAN 2011 APB)	BY2010 $M Current Estimate (DEC 2010 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	4142.9	4217.6	
Quantity	8	8	
Unit Cost	517.862	527.200	+1.80
Average Procurement Unit Cost (APUC)			
Cost	1519.0	1594.2	
Quantity	6	6	
Unit Cost	253.167	265.700	+4.95

Unit Cost	BY2010 $M Original UCR Baseline (MAY 2008 APB)	BY2010 $M Current Estimate (DEC 2010 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	3840.8	4217.6	
Quantity	8	8	
Unit Cost	480.100	527.200	+9.81
Average Procurement Unit Cost (APUC)			
Cost	1381.0	1594.2	
Quantity	6	6	
Unit Cost	230.167	265.700	+15.44

Unit Cost History



		BY2010 $M		TY $M	
	Date	PAUC	APUC	PAUC	APUC
Original APB	MAY 2008	475.562	228.000	500.288	248.383
APB as of January 2006	N/A	N/A	N/A	N/A	N/A
Revised Original APB	N/A	N/A	N/A	N/A	N/A
Prior APB	MAY 2008	475.562	228.000	500.288	248.383
Current APB	JAN 2011	517.862	253.167	533.725	269.333
Prior Annual SAR	DEC 2009	507.150	238.133	525.862	253.750
Current Estimate	DEC 2010	527.200	265.700	543.762	282.667

SAR Unit Cost History

Current SAR Baseline to Current Estimate (TY $M)

Initial PAUC Dev Est	Changes								PAUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
500.288	-8.488	0.000	0.775	0.000	63.062	0.000	-11.875	43.474	543.762

Current SAR Baseline to Current Estimate (TY $M)

Initial APUC Dev Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
248.383	-5.850	0.000	1.033	0.000	54.933	0.000	-15.833	34.283	282.667

SAR Baseline History

Item/Event	SAR Planning Estimate (PE)	SAR Development Estimate (DE)	SAR Production Estimate (PdE)	Current Estimate
Milestone A	N/A	N/A	N/A	N/A
Milestone B	N/A	FEB 2008	N/A	MAY 2008
Milestone C	N/A	SEP 2009	N/A	N/A
IOC	N/A	N/A	N/A	N/A
Total Cost (TY $M)	N/A	4002.3	N/A	4350.1
Total Quantity	N/A	8	N/A	8
Prog. Acq. Unit Cost (PAUC)	N/A	500.288	N/A	543.762

Cost Variance

Cost Variance Summary

Summary Then Year $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Dev Est)	2512.0	1490.3	--	4002.3
Previous Changes				
Economic	-35.9	-39.8	--	-75.7
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	+208.3	-23.1	--	+185.2
Other	--	--	--	--
Support	--	+95.1	--	+95.1
Subtotal	+172.4	+32.2	--	+204.6
Current Changes				
Economic	+3.1	+4.7	--	+7.8
Quantity	--	--	--	--
Schedule	--	+6.2	--	+6.2
Engineering	--	--	--	--
Estimating	-33.4	+352.7	--	+319.3
Other	--	--	--	--
Support	--	-190.1	--	-190.1
Subtotal	-30.3	+173.5	--	+143.2
Total Changes	+142.1	+205.7	--	+347.8
CE - Cost Variance	2654.1	1696.0	--	4350.1
CE - Cost & Funding	2654.1	1696.0	--	4350.1

Summary Base Year 2010 $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Dev Est)	2459.8	1381.0	--	3840.8
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	+193.7	-28.7	--	+165.0
Other	--	--	--	--
Support	--	+90.1	--	+90.1
Subtotal	+193.7	+61.4	--	+255.1
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-30.1	+330.6	--	+300.5
Other	--	--	--	--
Support	--	-178.8	--	-178.8
Subtotal	-30.1	+151.8	--	+121.7
Total Changes	+163.6	+213.2	--	+376.8
CE - Cost Variance	2623.4	1594.2	--	4217.6
CE - Cost & Funding	2623.4	1594.2	--	4217.6

Previous Estimate: December 2009

RDT&E	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+3.1
Adjustment for current and prior escalation. (Estimating)	-2.9	-2.9
Capability Insertion Program (CIP) removed in order to correct erroneous inclusion in previous submission. The work being accomplished in CIP is for the enhancement of IIIB and IIIC, and will be included in their respective APBs. (Estimating)	-251.2	-263.0
Increase due to Post Critical Design Review (CDR) Cost Estimating updates based on updated cost estimating relationships (CERs), software code counts and risk ranges. (Estimating)	+253.0	+266.7
Updated assumptions for Launch and On-Orbit Operations based on actuals from IIF. (Estimating)	-29.0	-34.2
RDT&E Subtotal	-30.1	-30.3

Procurement	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+4.7
Stretch-out of procurement buy profile to a 2-2-2 instead of a 3-2-1. (Schedule)	0.0	+6.2
Adjustment for current and prior escalation. (Estimating)	-0.4	-0.5
Realignment of funding based on new Buy Profile which changed from 3-2-1 to 2-2-2 (Estimating)	+87.7	+89.9
Increase due to the reclassification of funds from Support to Flyaway (Estimating)	+178.6	+190.1
Decrease due to the reclassification of funds from Support to Flyaway (Support)	-178.7	-190.1
Realignment of Launch Operations to reflect current execution plan (Estimating)	+59.9	+68.2
Engineering change order (ECO) calculation methodology updated (Estimating)	+4.8	+5.0
Adjustment for current and prior escalation. (Support)	-0.1	0.0
Procurement Subtotal	+151.8	+173.5

Contracts

Appropriation: RDT&E	
Contract Name	**Global Positioning System (GPS) IIIA**
Contractor	Lockheed Martin Corporation
Contractor Location	Newton, PA 18940
Contract Number, Type	FA8807-08-C-0010, CPIF/CPAF
Award Date	May 15, 2008
Definitization Date	May 15, 2008

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
1464.0	N/A	2	1550.9	N/A	2	1584.6	1777.3

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date	-75.8	-46.3
Previous Cumulative Variances	-21.2	-4.4
Net Change	-54.6	-41.9

Cost And Schedule Variance Explanations

The net unfavorable Cost Variance (CV) was caused by inefficiencies in Satellite Vehicle bus, Communications Payload (COM) and Navigation Payload (NPE) Integrated Product Teams (IPTs). Bus required additional resources to complete Telemetry, Tracking & Control (TT&C) hardware design requirements as well as Field Programmable Gate Array (FGPA) implementation. In addition, bus experienced cost performance issues on the Honeywell IMU due to the technical complexity and efforts to conduct a thorough program Critical Design Review (CDR). COM has experienced cost growth due to the increased efforts required to definitize suppliers and service agreements, increased resources necessary to satisfy MIL STD 1521B design review process for CDR, increased Program Management support of unplanned contract actions, as well as increased Material expenditures. NPE has required additional resources to complete Parts, Materials, and Processes (PMP) efforts to produce Technical Operating Report (TOR) compliant Source Control Drawings (SCDs) and requirements changes through CDR. In addition, NPE has experienced cost growth due to CDR spec rollout efforts and Survivability and Reliability Mission Data Unit (MDU) design tasks, as well as software development.

The net unfavorable Schedule Variance (SV) was caused by inefficiencies in Assembly, Integration and Test (AI&T), bus, and Navigation IPTs. AI&T’s delay is due mainly to late support equipment material receipt; this delay is expected to begin recovery in December 2010. The bus IPT's current schedule variance is primarily driven by parts and material delays, making up over 70% of the IPT's SV. Revised material forecasts and delivery schedules from suppliers are in work as the program completes the contractor's estimate at completion. Currently the delayed material is not expected to impact the program. NPE’s SV is due to delayed material receipts associated with flight equipment due to TOR requirements.

Contract Comments

The current PM Estimated Price at Complete represents the governments estimated cost for the current GPS IIIA to cover potential developmental risks.

The initial target price changed from $1464M to $1550.9M because of the exercising of CLIN 0011 ($74M) in December 2010, and other studies/impacts/changes plus fee ($12.9M).

Deliveries and Expenditures

Deliveries To Date	Plan To Date	Actual To Date	Total Quantity	Percent Delivered
Development	0	0	2	0.00%
Production	0	0	6	0.00%
Total Program Quantities Delivered	0	0	8	0.00%

Expenditures and Appropriations (TY $M)			
Total Acquisition Cost	4350.1	Years Appropriated	10
Expenditures To Date	1358.0	Percent Years Appropriated	40.00%
Percent Expended	31.22%	Appropriated to Date	1907.5
Total Funding Years	25	Percent Appropriated	43.85%

Operating and Support Cost

Assumptions And Ground Rules

Costs BY2010 $K		
Cost Element	GPS IIIA Avg Annual Cost for 24 Satellite Constellation	No Antecendant
Unit-Level Manpower	--	--
Unit Operations	--	--
Maintenance	--	--
Sustaining Support	--	--
Continuing System Improvements	--	--
Indirect Support	--	--
Other	--	--
Total Unitized Cost (Base Year 2010 $)	--	--

Total O&S Costs $M	GPS IIIA	No Antecendant
Base Year	--	--
Then Year	--	--

There are currently no GPS IIIA O&S costs. The O&S responsibility for GPS IIIA is accomplished within OCX, specifically through software maintenance/upgrade. Once the satellite is launched, there is no sustainment being accomplished within the GPS III program.