Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-239

NPOESS

As of December 31, 2010

Defense Acquisition Management
Information Retrieval
(DAMIR)

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Program Information

Designation And Nomenclature (Popular Name)

National Polar-orbiting Operational Environmental Satellite System (NPOESS)

DoD Component

Air Force

Responsible Office

Responsible Office

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Date Assigned December 1, 2010

References

SAR Baseline (Production Estimate)

Under Secretary of the Air Force (USecAF) Approved Acquisition Program Baseline (APB) dated August 22, 2002

Approved APB

Defense Acquisition Executive Approved Acquisition Program Baseline (APB) dated December 11, 2008

Mission and Description

The National Polar-orbiting Operational Environmental Satellite System (NPOESS) program was required to provide, for a period of at least 10 years, a remote sensing capability to acquire, receive at ground terminals, and disseminate to processing centers, global and regional environmental imagery and specialized meteorological information. This includes climatic, terrestrial, oceanographic, solar-geophysical and other data supporting Department of Commerce (DoC)/National Oceanic and Atmospheric Administration (NOAA) mission requirements, and Department of Defense (DoD) peacetime and wartime missions.

Executive Summary

On February 1, 2010, the Executive Office of the President (EOP) restructured the National Polar-orbiting Observational Satellite System (NPOESS) Program. The Department of Defense (DoD), the Department of Commerce (DoC), and the National Aeronautics and Space Administration (NASA) will no longer jointly acquire NPOESS.

The EOP assigned responsibility for each of the three planned orbits to the agency holding the majority of interest in that orbit. The DoC, through the National Oceanic and Atmospheric Administration (NOAA), will populate the afternoon orbit via the Joint Polar Satellite System (JPSS). The DoD, through the Air Force (AF), will populate the early morning orbit. The DoD will pursue a spacecraft program that relates to the Defense Meteorological Satellite Program (DMSP) on a schedule that ensures continuity in the early morning orbit. The U.S. Government will continue to rely on capabilities from the European Organization for the Exploitation of Meteorological Satellites (EUMETSAT) partners for the mid-morning orbit.

The Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics (USD/AT&L) issued Acquisition Decision Memorandas (ADMs) that directed the AF to procure DoD-only weather satellites for the early morning orbit. Per ADM dated August 13, 2010, the AF will leverage progress made under the NPOESS program and apply it to develop two (2) DoD tailored, purpose-built satellites with the Visual Infrared Imaging Radiometer Suite (VIIRS) as its primary sensor, along with Space Environment Monitor (SEM) and a microwave sensor that meets minimum of legacy DMSP microwave sensing capability. The program is named Defense Weather Satellite System (DWSS).

Currently, the AF is executing the ADMs by restructuring the old NPOESS contract to a more DoD-specific DWSS contract, while transferring NOAA/NASA sensors off to the JPSS contract. As part of the NPOESS restructure into DWSS and JPSS, the Common Ground System (CGS) will be funded and developed by NOAA/NASA. The cost sharing agreement between NOAA/NASA and the DoD for the Operations and Support (O&S) costs of the CGS is currently under review. The CGS has already been transitioned off the DWSS NGAS contract and onto a separate JPSS contract.

This SAR contains elements of the old NPOESS program, the proposed DWSS and JPSS programs, and the CGS. Consequently, this SAR is a snapshot of a restructure that is still in work and does not adequately represent the final DWSS program. The Department will submit a quarterly SAR as soon as the DWSS program is defined.

There are no significant software development issues on this program.

Threshold Breaches

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

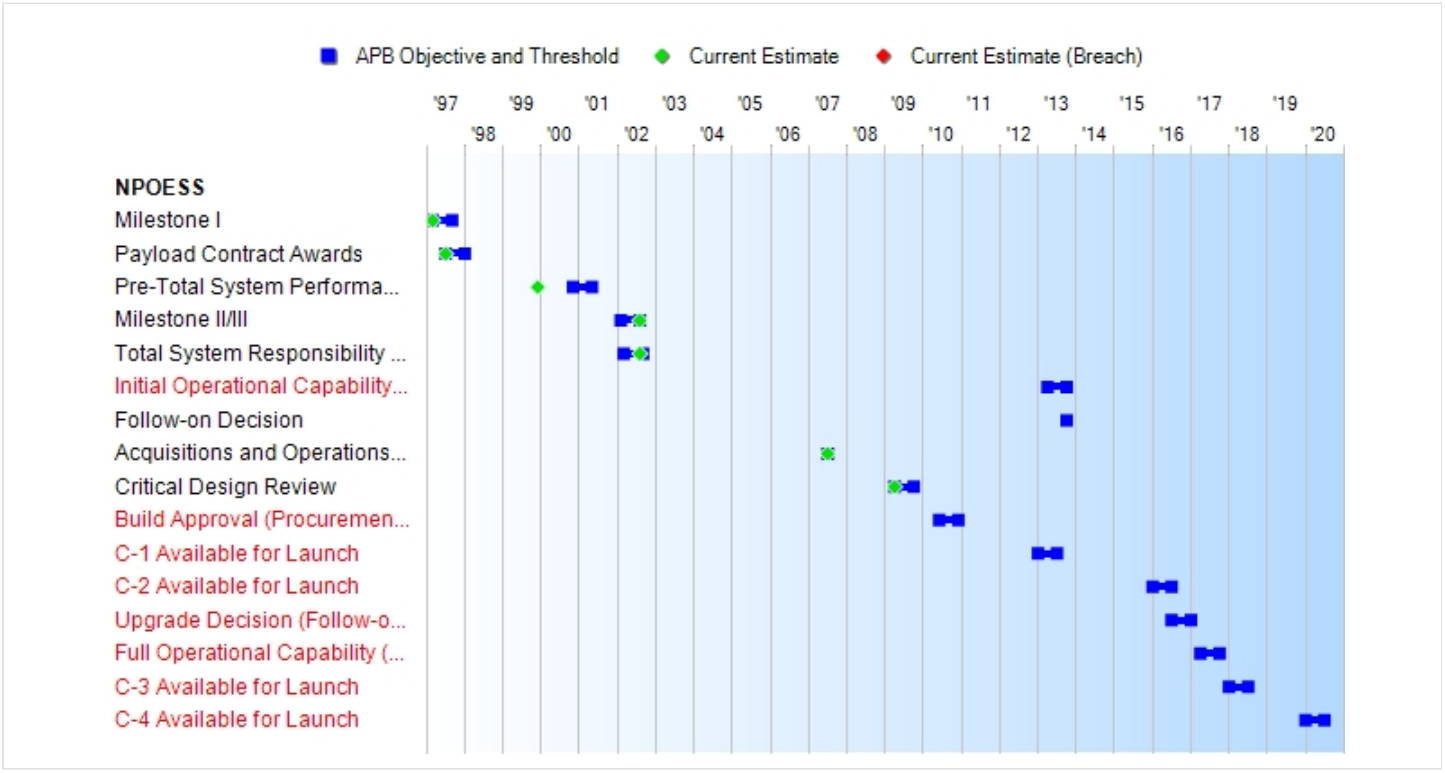
Nunn-McCurdy Breaches		
Current UCR Baseline		
	PAUC	Significant
	APUC	None
Original UCR Baseline		
	PAUC	None
	APUC	None

Explanation of Breach

Based on DoD weather requirements and an ADM dated June 22, 2010, the launch date of the first DWSS satellite is set for FY 2018. Since the NPOESS contract restructure to DWSS is still in progress, based on the old NPOESS program launch in FY 2016, a two (2) year shift in launch dates causes a potential APB schedule breach.

The Current Estimate (CE) (December 2010 SAR) is based on DoD funding only; the DoC component of the old NPOESS program has been extracted (50% of total funding) from FY 1995 - FY 2010. FY 2011 - To Complete will consist of AF Research Development Test & Evaluation (RDT&E) funding for the DWSS program only. In addition, the DoC quantities have also been removed for the CE in the SAR, decreasing units from four (4) to two (2). Due to the NPOESS restructure, there is a Significant breach of the Nunn-McCurdy PAUC thresholds based on the combination of the old NPOESS program prior costs and estimated DWSS To Complete costs.

Schedule


APB Objective and Threshold
Current Estimate
Current Estimate (Breach)
'97
'98
'99
'00
'01
'02
'03
'04
'05
'06
'07
'08
'09
'10
'11
'12
'13
'14
'15
'16
'17
'18
'19
'20
NPOESS
Milestone I
Payload Contract Awards
Pre-Total System Performa...
Milestone II/III
Total System Responsibility ...
Initial Operational Capability...
Follow-on Decision
Acquisitions and Operations...
Critical Design Review
Build Approval (Procuremen...
C-1 Available for Launch
C-2 Available for Launch
Upgrade Decision (Follow-o...
Full Operational Capability (...
C-3 Available for Launch
C-4 Available for Launch

Milestones	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Current Estimate
Milestone I	MAR 1997	MAR 1997	SEP 1997	MAR 1997
Payload Contract Awards	JUL 1997	JUL 1997	JAN 1998	JUL 1997
Pre-Total System Performance Responsibility (pre-TSPR) Contract Award	NOV 2000	NOV 2000	MAY 2001	DEC 1999
Milestone II/III	FEB 2002	FEB 2002	AUG 2002	AUG 2002
Total System Responsibility (TSPR) Contract Award	MAR 2002	MAR 2002	SEP 2002	AUG 2002
Initial Operational Capability (IOC)	JUL 2011	APR 2013	OCT 2013	N/A [1]
Follow-on Decision	OCT 2013	N/A	N/A	N/A
Acquisitions and Operations System Contract	N/A	JUL 2007	JUL 2007	JUL 2007
Critical Design Review	N/A	APR 2009	OCT 2009	APR 2009
Build Approval (Procurement Option Decision)	N/A	JUN 2010	DEC 2010	N/A [1]
C-1 Available for Launch	N/A	JAN 2013	JUL 2013	N/A [1]
C-2 Available for Launch	N/A	JAN 2016	JUL 2016	N/A [1]
Upgrade Decision (Follow-on Decision)	N/A	JUL 2016	JAN 2017	N/A [1]
Full Operational Capability (FOC)	N/A	APR 2017	OCT 2017	N/A [1]
C-3 Available for Launch	N/A	JAN 2018	JUL 2018	N/A [1]
C-4 Available for Launch	N/A	JAN 2020	JUL 2020	N/A [1]

[1] *APB Breach*

Change Explanations

None

Memo

On February 1, 2010, the Executive Office of the President restructured the NPOESS program. This restructure resulted in the Department of Defense (DoD), Department of Commerce (DoC), and National Aeronautics and Space Administration (NASA) no longer jointly acquiring the NPOESS program. Therefore, the current estimates for future NPOESS Schedule milestones no longer apply.

Performance

Characteristics	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Demonstrated Performance	Current Estimate
Key EDR Parameters					
Atmospheric Vertical Moisture Profile					
Measurement Uncertainty (Clear: Surface - 600mb)	+/- 10%	+/- 10%	Contract/Threshold Value: Greater of 20% or 0.2 g kg-1	TBD	9.1% OR 0.2 g kg-1
Measurement Uncertainty (Cloudy: Surface - 600 mb)	+/- 10%	+/- 10%	Contract Value: Greater of 20% or 0.2g kg-1; Threshold Value: Greater of 25% or 0.25 g /kg	TBD	13.3% or 0.2 g kg-1
Atmospheric Vertical Temperature Profile					
Measurement Uncertainty (Clear: Surface - 300mb)	+/- 0.5K	+/- 0.5K	Contract Value: +/- 1.6K per 1 km layer; Threshold Value: +/- 2.5 to +/- 1.5K per 2km layer	TBD	0.8K per 1 km layer
Measurement Uncertainty (Cloudy: Surface - 700mb)	+/- 0.5K	+/- 0.5K	Contract Value: +/- 2.5K per 1 km layer; Threshold Value: +/- 3.0 to +/- 1.5K per 2.5 km layer	TBD	1.3K per 1 km layer
Imagery					
Horizontal Resolution					
Horizontal Cell Size at Nadir, clear	0.1 km	0.1 km	Contract Value: 0.4 km; Threshold	TBD	0.4 km

			Value: Regional .65 km (fine), Global 2.5 km (smooth)		
Refresh Visible and IR bands					
Average Revisit Time	1 hr	1 hr	Contract Value: At any location, the avg revisit time will be 4 hrs or less.; Threshold Value: Less than 4 hrs	TBD	At any location, the avg revisit time will be 4 hrs or less
Maximum Revisit Time	1 hr	1 hr	Contract Value: At any location, the max revisit time will be 6 hrs or less.; Threshold Value: 365 min (~6.1 hrs)	TBD	At any location, the max revisit time will be 6 hrs or less
Percent Compliance	N/A	1 hr	Contract Value: At any location, at least 75% of the revisit times will be 4 hrs or less; Threshold Value: 56.0% of points with a refresh of 4 hrs or less	TBD	At any location, at least 75% of the revisit times will be 4 hrs or less
Sea Surface Temperature					
Horizontal Resolution					
Horizontal Cell Size at Nadir, clear	0.25 km	0.25 km	Contract Value: 1.0 km; Threshold Value: 1.1 km (Regional) 8.0 km (Global)	TBD	0.75 km

Measurement Uncertainty, clear	+/- 0.1 deg C	+/- 0.1 deg C	Contract Value: +/- 0.5 deg C. Threshold Value: +/- 1.0 C (Coastal)+/- 0.5 C (Global-Nighttime) +/- 0.6 C (Global-Daytime).	TBD	0.4K
Global Sea Surface Winds					
Measurement Accuracy (Speed)	Greater of +/- 1 m/s or +/- 10%	Greater of +/- 1 m/s or +/- 10%	Contract Value: Greater of +/- 2 m/s or +/- 10%; Threshold Value: 2 m/s for WS < 5 m/s; 1 m/s for 5 m/s < WS < 20 m/s; No capability for WS > 20 m/s	TBD	Greater of +/- 2 m/s or +/- 10%
Soil Moisture (Surface) Sensing Depth	Surface to -80 cm	Surface to -80 cm	Contract Value: Surface (skin layer: -0.1cm).; Threshold Value: Wet or Dry determination of bare soil surface	TBD	Surface (skin layer: -0.1cm
Key System Parameters					
Data Access	Selective denial of all U.S. data (ARGOS and SARSAT excepted)	Selective denial of all U.S. environmental sensor data (ARGOS and SARSAT excepted)	Contract Value: Selective denial of all U.S. environmental sensor data (ARGOS and SARSAT excepted);	TBD	Select denial of all U.S. data (ARGOS and SARSAT excepted)

			Threshold Value: Capability to deny exists but it is not "Selectable"		
Interoperability	100% of top-level IERs	100% of top-level IERs	Contract Value: 100% of critical top-level IERs; Threshold Value: Yes - Spacecraft to Field Terminals, Spacecraft to Centrals	TBD	100% of critical top-level IERs

Requirements Source: Requirements Document (IORD II) dated December 10, 2001. JROCM 101-06 , dated June 2, 2006 .

Acronyms And Abbreviations

ARGOS - French Data Collection and Location System
avg - average
C - Celsius
cm - centimeter
deg - degree
EDR - Environmental Data Record
g kg-1 - grams per kilogram
hr/hrs - hour/hours
IER - Information Exchange Requirements
IR - Infrared
K - Kelvin
km - kilometer
m/s - meters per second
max - maximum
mb - millibars
SARSAT - Search and Rescue Satellite Aided Tracking
WS - Wind Speed

Change Explanations

None

Memo

The requirements in this section reflect the NPOESS program and do not necessarily represent the final Defenese Weather Satellite System (DWSS) requirements.

Track To Budget

General Memo

NPOESS was a Presidentially directed Tri-agency program composed of Department of Defense (DoD), Department of Commerce (DoC) and National Aeronautics and Space Administration (NASA) personnel. The Tri-agency Memorandum of Agreement (MOA) states that funding is provided jointly by DoD, through the Air Force, and DOC, through the National Oceanic and Atmospheric Administration (NOAA).

On February 1, 2010, the Executive Office of the President (EOP) restructured the National Polar-orbiting Operational Satellite System (NPOESS) Program. The DoD, the DoC, and NASA will no longer jointly acquire the NPOESS program.

The DoD component of the restructured NPOESS program is the Defense Weather Satellite System (DWSS). DWSS will be a DoD only program, the DoC component of the NPOESS program has been extracted (50% of total funding) from FY 1995 - FY 2010; their units have also been removed for the Current Estimate (CE) in the SAR. FY 2011 - To Complete will consist of Air Force (AF) Research Development Test & Evaluation (RDT&E) funding only. DoD funds NPOESS through FY 2004 with RDT&E via PE 0603434F, in FY 2005 - FY 2010 via PE 0301578F, and FY 2011 and beyond via PE 0301587F.

Launch Services are funded entirely with Missile Procurement, AF (MPAF) via Evolved Expendable Launch Vehicle (EELV) PE 0305393F. These costs are reported as part of the EELV program.

RDT&E

APPN 3600	BA 05	PE 0305178F	(Air Force)	
	Project 4056	National Polar-orbiting Operational Environmental Sat. Sys./National Polar-orbiting Operational Environmental Sat. Syst.		(Sunk)
APPN 3600	BA 05	PE 0305187F	(Air Force)	
	Project 4056	Defense Weather Satellite System		
APPN 3600	BA 04	PE 0603434F	(Air Force)	
	Project 4056	National Polar-orbiting Operational Environmental Sat. Sys./National Polar-orbiting Operational Environmental Sat. Syst.		(Sunk)

Procurement

APPN 3020	BA 05	PE 0305178F	(Air Force)

ICN NPS000	National Polar-orbiting Operational Environmental Satellite System.	(Sunk)

Cost and Funding

Cost Summary

Total Acquisition Cost and Quantity

	BY2002 $M			BY2002 $M	TY $M		
Appropriation	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Current Estimate	SAR Baseline Prod Est	Current APB Production Objective	Current Estimate
RDT&E	4401.7	7346.8	8113.7	6026.3	4765.5	8412.1	7303.3
Procurement	1136.3	2446.9	2691.6	0.0	1352.1	3332.0	0.0
Flyaway	1136.3	--	--	0.0	1352.1	--	0.0
Recurring	1136.3	--	--	0.0	1352.1	--	0.0
Non Recurring	0.0	--	--	0.0	0.0	--	0.0
Support	0.0	--	--	0.0	0.0	--	0.0
Other Support	0.0	--	--	0.0	0.0	--	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	5538.0	9793.7	N/A	6026.3	6117.6	11744.1	7303.3

The total NPOESS program costs include both Department of Commerce (DoC) and Department of Defense (DoD) funding budgeted on a 50/50-share basis by year. The numbers listed in the Production Estimate represent the total NPOESS satellites, ground activities, launch support, Government Program Office support, Integrated Program Office (IPO) share of National Aeronautics and Space Administration (NASA)/IPO NPOESS Preparatory Program, and related risk reduction efforts.

On February 1, 2010, the Executive Office of the President (EOP) restructured the National Polar-orbiting Operational Satellite System (NPOESS) Program. The DoD, the DoC, and NASA will no longer jointly acquire the NPOESS program.

The DoD component of the restructured NPOESS program is the Defense Weather Satellite System (DWSS). DWSS will be a DoD only program, the DoC component of the NPOESS program has been extracted (50% of total funding) from FY 1995 - FY 2010; their units have also been removed for the Current Estimate (CE) in the SAR. FY 2011 - To Complete will consist of Air Force (AF) Research Development Test & Evaluation (RDT&E) funding only.

Quantity	SAR Baseline Prod Est	Current APB Production	Current Estimate
RDT&E	2	2	2
Procurement	4	2	0
Total	6	4	2

The quantities shown reflect the number of satellites to be acquired by DWSS only with the DoC satellites removed. The 2009 NPOESS SAR reduced quantities from four (4) to zero (0) and the Current Estimate (CE) in the SAR reflects the current DoD plan to acquire two (2) satellites under DWSS.

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	2913.6	175.0	444.9	526.8	515.6	423.7	417.9	1885.8	7303.3
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 2012 Total	2913.6	175.0	444.9	526.8	515.6	423.7	417.9	1885.8	7303.3
PB 2011 Total	5809.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5809.6
Delta	-2896.0	175.0	444.9	526.8	515.6	423.7	417.9	1885.8	1493.7

Although the FY 2011 President’s Budget request was for $352 million, the program will be allocated $175 million total based on draft FY 2011 Congressional language. This $175 million allocation for FY 2011 is also consistent with the Cost Assessment and Program Evaluation (CAPE) assessment conducted in October 2010.

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	0	0	0	0	0	0	0
PB 2012 Total	2	0	0	0	0	0	0	0	0	2
PB 2011 Total	0	0	0	0	0	0	0	0	0	0
Delta	2	0	0	0	0	0	0	0	0	2

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
1995	--	--	--	--	--	--	11.7
1996	--	--	--	--	--	--	14.0
1997	--	--	--	--	--	--	28.2
1998	--	--	--	--	--	--	32.6
1999	--	--	--	--	--	--	56.2
2000	--	--	--	--	--	--	58.3
2001	--	--	--	--	--	--	72.1
2002	--	--	--	--	--	--	154.2
2003	--	--	--	--	--	--	227.5
2004	--	--	--	--	--	--	269.7
2005	--	--	--	--	--	--	303.3
2006	--	--	--	--	--	--	319.0
2007	--	--	--	--	--	--	340.4
2008	--	--	--	--	--	--	331.0
2009	--	--	--	--	--	--	300.5
2010	--	--	--	--	--	--	394.9
2011	--	--	--	--	--	--	175.0
2012	--	--	--	--	--	--	444.9
2013	--	--	--	--	--	--	526.8
2014	--	--	--	--	--	--	515.6
2015	--	--	--	--	--	--	423.7
2016	--	--	--	--	--	--	417.9
2017	--	--	--	--	--	--	390.7
2018	--	--	--	--	--	--	392.0
2019	--	--	--	--	--	--	298.4
2020	--	--	--	--	--	--	271.1
2021	--	--	--	--	--	--	280.1
2022	--	--	--	--	--	--	107.3
2023	--	--	--	--	--	--	54.8
2024	--	--	--	--	--	--	52.9
2025	--	--	--	--	--	--	31.0
2026	--	--	--	--	--	--	7.5
Subtotal	**2**	**--**	**--**	**--**	**--**	**--**	**7303.3**

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

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2002 $M	Non End Item Recurring Flyaway BY 2002 $M	Non Recurring Flyaway BY 2002 $M	Total Flyaway BY 2002 $M	Total Support BY 2002 $M	Total Program BY 2002 $M
1995	--	--	--	--	--	--	12.7
1996	--	--	--	--	--	--	14.9
1997	--	--	--	--	--	--	29.6
1998	--	--	--	--	--	--	34.0
1999	--	--	--	--	--	--	58.0
2000	--	--	--	--	--	--	59.3
2001	--	--	--	--	--	--	72.3
2002	--	--	--	--	--	--	153.1
2003	--	--	--	--	--	--	222.8
2004	--	--	--	--	--	--	257.6
2005	--	--	--	--	--	--	282.5
2006	--	--	--	--	--	--	288.5
2007	--	--	--	--	--	--	299.9
2008	--	--	--	--	--	--	286.0
2009	--	--	--	--	--	--	256.3
2010	--	--	--	--	--	--	333.4
2011	--	--	--	--	--	--	145.8
2012	--	--	--	--	--	--	365.1
2013	--	--	--	--	--	--	425.3
2014	--	--	--	--	--	--	409.3
2015	--	--	--	--	--	--	330.8
2016	--	--	--	--	--	--	320.8
2017	--	--	--	--	--	--	294.9
2018	--	--	--	--	--	--	290.9
2019	--	--	--	--	--	--	217.8
2020	--	--	--	--	--	--	194.5
2021	--	--	--	--	--	--	197.6
2022	--	--	--	--	--	--	74.4
2023	--	--	--	--	--	--	37.4
2024	--	--	--	--	--	--	35.5
2025	--	--	--	--	--	--	20.4
2026	--	--	--	--	--	--	4.9
Subtotal	**2**	**--**	**--**	**--**	**--**	**--**	**6026.3**

On February 1, 2010, the Executive Office of the President (EOP) restructured the National Polar-orbiting Operational Satellite System (NPOESS) Program. The DoD, the DoC, and NASA will no longer jointly acquire the NPOESS program.

The Defense Weather Satellite System (DWSS) program will procure 2 satellites with Research, Development, Test and Evaluation (RDT&E) funding. Since DWSS will be a DoD only program, the DoC component of the NPOESS

program has been extracted (50% of total funding) from FY 1995 - FY 2010; their units have also been removed for Current Estimate (CE) in the SAR. FY 2011 - To Complete will consist of Air Force RDT&E funding only for the DWSS program.

Although the FY 2011 President's Budget request was for $352 million, the program will be allocated $175 million total based on draft FY 2011 Congressional language. This $175 million allocation for FY 2011 is also consistent with the Cost Assessment and Program Evaluation (CAPE) assessment conducted in October 2010.

Low Rate Initial Production

There is no Low Rate Initial Production (LRIP) for NPOESS.

Foreign Military Sales

None

Nuclear Cost

None

Unit Cost

Unit Cost Report

Unit Cost	BY2002 $M Current UCR Baseline (DEC 2008 APB)	BY2002 $M Current Estimate (DEC 2010 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	9793.7	6026.3	
Quantity	4	2	
Unit Cost	2448.425	3013.150	**+23.06** [1]
Average Procurement Unit Cost (APUC)			
Cost	2446.9	0.0	
Quantity	2	0	
Unit Cost	1223.450	--	--

Unit Cost	BY2002 $M Revised Original UCR Baseline (DEC 2008 APB)	BY2002 $M Current Estimate (DEC 2010 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	9793.7	6026.3	
Quantity	4	2	
Unit Cost	2448.425	3013.150	+23.06
Average Procurement Unit Cost (APUC)			
Cost	2446.9	0.0	
Quantity	2	0	
Unit Cost	1223.450	--	--

Unit Cost	TY $M Current UCR Baseline (DEC 2008 APB)	TY $M Current Estimate (DEC 2010 SAR)	TY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	11744.1	7303.3	
Unit Cost	2936.025	3651.650	+24.37
Average Procurement Unit Cost (APUC)			
Cost	3332.0	0.0	
Unit Cost	1666.000	--	0.00

	TY $M		
Unit Cost	**Revised Original UCR Baseline (DEC 2008 APB)**	**Current Estimate (DEC 2010 SAR)**	**TY % Change**
Program Acquisition Unit Cost (PAUC)			
Cost	11744.1	7303.3	
Unit Cost	2936.025	3651.650	+24.37
Average Procurement Unit Cost (APUC)			
Cost	3332.0	0.0	
Unit Cost	1666.000	--	0.00

[1] **Nunn-McCurdy Breach**

The Executive Office of the President (EOP) restructured the National Polar-orbiting Operational Satellite System (NPOESS) Program. The Department of Defense (DoD), the Department of Commerce (DoC), and the National Aeronautics and Space Administration (NASA) will no longer jointly acquire NPOESS program.

The Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics (USD/AT&L) issued Acquisition Decision Memorandas (ADMs) that directed the Air Force (AF) to procure DoD-only weather satellites for the early morning orbit. The AF is executing the ADMs by restructuring the old NPOESS contract to a more DoD-specific Defense Weather Satellite System (DWSS) contract, while transferring National Oceanic and Atmospheric Administration (NOAA)/NASA sensors off to the Joint Polar Satellite System (JPSS) contract. Based on DoD weather requirements, the launch date of the first DWSS satellite is set for FY 2018 versus the NPOESS program baseline launch in FY 2016, a two (2) year shift of launch dates.

The Current Estimate (CE) (December 2010 SAR) is based on DoD funding only; the DoC component of the old NPOESS program has been extracted (50% of total funding) from FY 1995 - FY 2010. FY 2011 - To Complete will consist of AF Research Development Test & Evaluation (RDT&E) funding for the DWSS program only. In addition, the DoC quantities have also been removed for the CE in the SAR, decreasing units from four (4) to two (2). Due to the NPOESS restructure, there is a Significant breach of the Nunn-McCurdy PAUC thresholds based on the old NPOESS program.

Unit Cost Breach Data

Changes from Previous SAR	**$M/Qty.**	**Percent**
PAUC (BY $M)	3013.150	0.00
APUC (BY $M)		0.00
PAUC Quantity	2	0.00
PAUC (TY $M)	3651.650	0.00
APUC (TY $M)		0.00

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

Unit Cost PAUC Changes

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only. The AF is executing the ADMs by restructuring the old NPOESS contract to a more DoD-specific Defense Weather Satellite System (DWSS) contract, while transferring National Oceanic and Atmospheric Administration (NOAA)/NASA sensors off to the Joint Polar Satellite System (JPSS) contract. Based on DoD weather requirements, the launch date of the first DWSS satellite is set for FY 2018 versus the NPOESS program baseline launch in FY 2016, a two (2) year shift of launch dates. The restructure of the old NPOESS contract to DWSS and the shift in launch dates causes the costs, as well as the PAUC, of the program to increase. A full Program Office Estimate (POE) has not been completed for the restructured program. Once the old NPOESS contract has been restructured to a DoD-specific DWSS contract, a more robust POE will be accomplished and the PAUC will be reassessed if necessary.

Unit Cost APUC Changes

The Current Estimate (CE) (December 2010 SAR) is based on DoD funding only; the DoC component of the old NPOESS program has been extracted (50% of total funding) from FY 1995 - FY 2010. Quantities have also been removed for the CE in the SAR, decreasing units from four (4) to two (2). The two (2) DWSS units will be funded with AF Research Development Test & Evaluation (RDT&E) funding only. DWSS will not acquire any production satellites, therefore the CE APUC is zero (0).

Impact of Performance or Schedule Changes

The Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics (USD/AT&L) issued Acquisition Decision Memorandas (ADMs) that directed the Air Force (AF) to procure DoD-only weather satellites for the early morning orbit. The AF is executing the ADMs by restructuring the old NPOESS contract to a more DoD-specific Defense Weather Satellite System (DWSS) contract, while transferring National Oceanic and Atmospheric Administration (NOAA)/NASA sensors off to the Joint Polar Satellite System (JPSS) contract. Based on DoD weather requirements, the launch date of the first DWSS satellite is set for FY 2018 versus the NPOESS program baseline launch in FY 2016, a two (2) year shift of launch dates.

Program Management or Control

The AF is executing the ADMs by restructuring the old NPOESS contract to a more DoD-specific Defense Weather Satellite System (DWSS) contract, while transferring National Oceanic and Atmospheric Administration (NOAA)/NASA sensors off to the Joint Polar Satellite System (JPSS) contract. The DWSS POE is expected to be completed in time for the FY 2014 Program Objective Memorandum (POM).

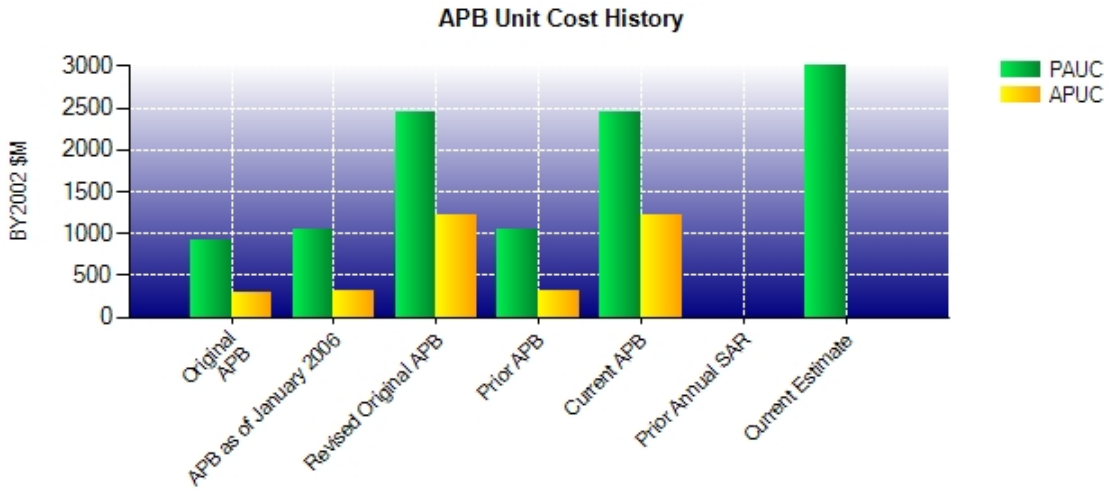
Cost Control Actions

A full Program Office Estimate (POE) has not been completed for the restructured program. Once the old NPOESS contract has been restructured to a DoD-specific DWSS contract, a more robust POE will be accomplished and the PAUC will be reassessed if necessary.

Nunn-McCurdy Comments

This SAR contains elements of the old NPOESS program, the proposed DWSS and JPSS programs, and the CGS. Consequently, this SAR is a snapshot of a restructure that is still in work and does not adequately represent the final DWSS program. The Department will submit a quarterly SAR as soon as the DWSS program is defined.

Unit Cost History



		BY2002 $M		TY $M	
	Date	PAUC	APUC	PAUC	APUC
Original APB	AUG 2002	923.000	284.075	1019.600	338.025
APB as of January 2006	JAN 2005	1046.083	312.250	1132.583	367.050
Revised Original APB	DEC 2008	2448.425	1223.450	2936.025	1666.000
Prior APB	JAN 2005	1046.083	312.250	1132.583	367.050
Current APB	DEC 2008	2448.425	1223.450	2936.025	1666.000
Prior Annual SAR	DEC 2009	N/A	N/A	N/A	N/A
Current Estimate	DEC 2010	3013.150	N/A	3651.650	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	
1019.600	1.200	1068.000	490.100	-429.850	1502.600	0.000	0.000	2632.050	3651.650

Current SAR Baseline to Current Estimate (TY $M)

Initial APUC Prod Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
338.025	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	MAR 1997	N/A	MAR 1997	MAR 1997
Milestone II	SEP 2000	N/A	FEB 2002	AUG 2002
Milestone III	DEC 2011	N/A	OCT 2013	N/A
IOC	DEC 2010	N/A	JUL 2011	N/A
Total Cost (TY $M)	5329.0	N/A	6117.6	7303.3
Total Quantity	5	N/A	6	2
Prog. Acq. Unit Cost (PAUC)	1065.800	N/A	1019.600	3651.650

Cost Variance

Cost Variance Summary

Summary Then Year $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Prod Est)	4765.5	1352.1	--	6117.6
Previous Changes				
Economic	+66.0	-63.1	--	+2.9
Quantity	-2549.3	-3782.8	--	-6332.1
Schedule	+897.6	+82.6	--	+980.2
Engineering	-567.6	-292.1	--	-859.7
Estimating	+3189.6	+2711.1	--	+5900.7
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+1036.3	-1344.3	--	-308.0
Current Changes				
Economic	-0.5	--	--	-0.5
Quantity	+4389.7	--	--	+4389.7
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-2887.7	-7.8	--	-2895.5
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+1501.5	-7.8	--	+1493.7
Total Changes	+2537.8	-1352.1	--	+1185.7
CE - Cost Variance	7303.3	--	--	7303.3
CE - Cost & Funding	7303.3	--	--	7303.3

Summary Base Year 2002 $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Prod Est)	4401.7	1136.3	--	5538.0
Previous Changes				
Economic	--	--	--	--
Quantity	-2065.7	-2897.4	--	-4963.1
Schedule	+682.2	--	--	+682.2
Engineering	-437.9	-239.2	--	-677.1
Estimating	+2719.5	+2006.8	--	+4726.3
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+898.1	-1129.8	--	-231.7
Current Changes				
Economic	--	--	--	--
Quantity	+3365.4	--	--	+3365.4
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-2638.9	-6.5	--	-2645.4
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+726.5	-6.5	--	+720.0
Total Changes	+1624.6	-1136.3	--	+488.3
CE - Cost Variance	6026.3	--	--	6026.3
CE - Cost & Funding	6026.3	--	--	6026.3

Previous Estimate: December 2009

RDT&E	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	-0.5
Increase quantities to two (2) for Defense Weather Satellite System (DWSS) satellites which include Department of Defense (DoD) To Go costs (starting in FY 2011). The 2009 NPOESS SAR reduced quantities from four (4) to zero (0). The 2010 NPOESS SAR reflects the current DoD plan to acquire two (2) satellites under DWSS. (Quantity)	+3365.4	+4389.7
Adjustment for current and prior escalation. (Estimating)	+0.5	+0.5
Removal of DoC portion of sunk costs (FY 1995 - FY 2010). FY 2011 - To Complete will consist of Air Force Research Development Test and Evaluation funds only. (Estimating)	-2639.4	-2888.2
RDT&E Subtotal	+726.5	+1501.5

Procurement	$M	
Current Change Explanations	**Base Year**	**Then Year**
Removed DoC portion of Procurement Costs. (Estimating)	-6.5	-7.8
Procurement Subtotal	-6.5	-7.8

Contracts

Appropriation: RDT&E	
Contract Name	**NPOESS A&O**
Contractor	Northrop Grumman Aerospace System
Contractor Location	Redondo Beach, CA 90278
Contract Number, Type	F04701-02-C-0502, CPAF
Award Date	August 23, 2002
Definitization Date	August 23, 2002

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
2942.7	N/A	2	5919.0	N/A	2	5951.9	5934.3

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date	-196.0	-29.0
Previous Cumulative Variances	-141.5	-16.0
Net Change	-54.5	-13.0
Percent Variance		
Percent Complete		

Cost And Schedule Variance Explanations

The net unfavorable cost variance of -$54.5M was driven by the increased cost of building and testing the flight units of the Visible/Infrared Imager/Radiometer Suite (VIIRS) and Cross-track Infrared Sounder (CrIS) sensors and technical issues during the design/development of the NPOESS spacecraft bus.

The VIIRS sensor cost variance increased by $13.7M over the reporting period. The primary driver for the overrun was the significant increase in resources dedicated to building and testing the second flight unit. Specific technical issues that contributed to the cost growth included unplanned Circuit Card Assembly (CCA) drawing updates to correct errors/drawing escapes, failures discovered during proof load of the Bonded Strut Assembly, issues on the covers and baffles installed on the Rotating Telescope Assembly (RTA), build and test, and cost growth due to inefficiencies from NPOESS program redirection.

The CrIS unfavorable cost variance growth of $7.7M over the reporting period was driven primarily by significant repair & retest long after the unit was scheduled to be delivered. After the completion of an additional, unplanned Thermal Vacuum (TVAC) testing, several issues with electrical circuit cards were identified which extended work on the CrIS instrument, increasing the cost overrun.

The final cost variance driver over this period has been the NPOESS spacecraft development effort that contributed $33.1M to the growth of the negative cost variance. Technical issues with the command and data handling system, the attitude control system, and the solar array were the main drivers for this cost growth. Another driver of the cost growth was inefficiencies from NPOESS program redirection.

The net unfavorable schedule variance of -$13.0M on the NPOESS program was the result of recent delays building and testing the second flight units for the VIIRS and CrIS sensors. These delays were the result of various technical challenges and material delivery delays. In addition, the restructure of the program introduced inefficiencies into NPOESS efforts, causing delays in schedule.

Starting in October 2010, the contractor was provided relief from submitting Earned Value Management (EVM) reports until implementation of the restructured program baseline, which should occur within180 days after Defense Weather Satellite System (DWSS) contract definitization.

Contract Comments

The current contract price reflects all adjustments agreed to as part of the NPOESS program restructure. Currently the Air Force is restructuring the NPOESS contract for the Defense Weather Satellite System (DWSS). The initial Not-to-Exceed (NTE) request has been sent to the contractor.

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	0	--
Total Program Quantities Delivered	0	0	2	0.00%

Expenditures and Appropriations (TY $M)			
Total Acquisition Cost	7303.3	Years Appropriated	17
Expenditures To Date	2820.4	Percent Years Appropriated	53.13%
Percent Expended	38.62%	Appropriated to Date	3088.6
Total Funding Years	32	Percent Appropriated	42.29%

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Operating and Support Cost

Assumptions And Ground Rules

As part of the NPOESS restructure into Defense Weather Satellite System (DWSS) and Joint Polar Satellite System (JPSS), the Common Ground System (CGS) will be developed and funded by NOAA/NASA through JPSS. The cost sharing agreement between National Oceanic and Atmospheric Administration (NOAA)/National Aeronautics and Space Administration (NASA) and the Department of Defense (DoD) for the Operating and Support (O&S) costs of the CGS is currently under review.

Antecedent Systems: NPOESS replaces the following civil and DoD polar-orbiting environmental satellite systems: Defense Meteorological Satellite Program, National Oceanic and Atmospheric Administration Polar Operational Environmental Satellite, and the National Aeronautics and Space Administration Earth Observing System. However, data is not available for comparison.

Costs BY2002 $M		
Cost Element	**NPOESS Average Annual System Cost**	**Antecedent Systems**
Unit-Level Manpower	--	--
Unit Operations	--	--
Maintenance	--	--
Sustaining Support	61.69	--
Continuing System Improvements	--	--
Indirect Support	--	--
Other	--	--
Total Unitized Cost (Base Year 2002 $)	61.69	--

Total O&S Costs $M	NPOESS	Antecedent Systems
Base Year	987.0	--
Then Year	1472.0	--

The O&S costs reflect the most current position at the August 13, 2010, Defense Acquisition Board (DAB) and begin in FY 2016 and end in FY 2031 (16 years). O&S costs will be updated once the CGS cost sharing agreement is finalized.