Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-376

B-2 RMP

As of December 31, 2010

Defense Acquisition Management
Information Retrieval
(DAMIR)

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Program Information

Designation And Nomenclature (Popular Name)

B-2 Radar Modernization Program (RMP)

DoD Component

Air Force

Responsible Office

Responsible Office

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Date Assigned June 4, 2010

References

SAR Baseline (Production Estimate)

Air Force Acquisition Executive (AFAE) Approved Acquisition Program Baseline (APB) dated January 29, 2009

Approved APB

Air Force Acquisition Executive (AFAE) Approved Acquisition Program Baseline (APB) dated January 29, 2009

Mission and Description

The currently fielded B-2 radar system, designated the AN/APQ-181, was developed on the original B-2 Engineering and Manufacturing Development contract. The AN/APQ-181 is a multi-mode radar designed to support a wide variety of missions and functions. The primary requirements are to provide navigation updates, support penetration of enemy air defenses, support rendezvous with tanker aircraft and other B-2s, support bomb damage assessment, detect hazardous weather, support weapons delivery, determine runway status, and operate with a low probability of intercept. This last requirement resulted in the radar designed to operate in a frequency spectrum where the government is considered a secondary user.

In October 2000, the Department of Commerce notified the Department of Defense that the portion of the electromagnetic spectrum used by the B-2 radar would be redesignated for commercial use. Consequently, the B-2 will not be able to operate without interference with primary users. In order to ensure the continued operation of the B-2, the B-2 radar system must be modified to operate in another portion of the electromagnetic spectrum where the United States Government is guaranteed primary user status. The National Telecommunications and Information Administration (NTIA) requires all actions be completed by a classified Near Term Date, after which current B-2 radar operation will be prohibited. Recently, the NTIA issued a temporary legacy frequency assignment applicable to the United States and Possessions. However, this extension can be revoked at any time if a primary user emerges.

The B-2 Radar Modernization Program replaces the radar antenna and modifies its associated support electronics to enable the B-2 to remain compliant with law by changing the operating frequency of the radar and maintaining spectral purity within the portion of the electromagnetic spectrum. No changes to radar signal processing or radar data processing are required or anticipated.

Executive Summary

Since the last Selected Acquisition Report (SAR) in December 2009, the System Development and Demonstration (SDD) phase completed and the Low Rate Initial Production (LRIP) contract option continued to execute on schedule.

Required Assets Available (RAA) is defined as sufficient support equipment, spares, hardware, and fully qualified Mode Set 1 software to support five operational aircraft at Whiteman AFB. Air Force Global Strike Command (AFGSC) declared RAA March 15, 2010.

Mode Set 2 (MS2) consists of the radar modes required for the B-2 to execute its nuclear mission. All MS2 tests were successfully executed. AFGSC released the MS2 fielding recommendation decision on May 17, 2010. Radar Modernization Program (RMP) Modification Time Compliance Technical Order 1B-2A-927 released May 19, 2010.

RMP was rated Suitable and Effective in the Follow-on Operational Test & Evaluation Report released and signed by Air Force Operational Test & Evaluation Center on March 29, 2010.

Life-of-Type/Advance Procurement (LOT/AP) I & II material completed delivery of all 97,060 piece parts by January 2011. LOT III contract for 38,976 parts was awarded September 30, 2010.

The LRIP installs started July 28, 2010 and are progressing on schedule. Production is 67.6% expended, with the first two LRIP aircraft deliveries occurring ahead of schedule. The remaining installs are progressing on schedule.

Full Rate Production (FRP) priced option 2 for eight aircraft modifications was exercised October 28, 2010.

There are no significant software issues with this program.

Threshold Breaches

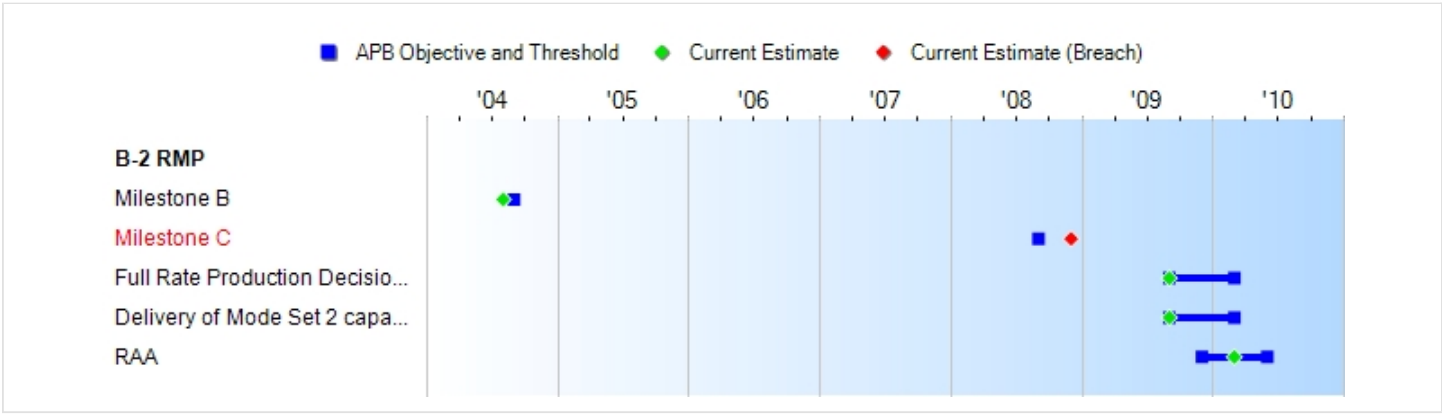
APB Breaches		
Schedule		☑
Performance		☐
Cost	RDT&E	☐
	Procurement	☐
	MILCON	☐
	Acq O&M	☐
Unit Cost	PAUC	☐
	APUC	☐

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

Explanation of Breach

The schedule breach was reported in the December 2009 Selected Acquisition Report.

Schedule



Milestones	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Current Estimate
Milestone B	SEP 2004	SEP 2004	SEP 2004	AUG 2004
Milestone C	SEP 2008	SEP 2008	SEP 2008	**DEC 2008**[1]
Full Rate Production Decision Review	SEP 2009	SEP 2009	MAR 2010	SEP 2009
Delivery of Mode Set 2 capability	SEP 2009	SEP 2009	MAR 2010	SEP 2009
RAA	DEC 2009	DEC 2009	JUN 2010	MAR 2010

[1] *APB Breach*

Acronyms And Abbreviations

RAA - Required Assets Available

Change Explanations

None

Memo

RAA is defined as sufficient support equipment, spares, hardware, and fully qualified Mode Set 1 software to support five operational aircraft at Whiteman Air Force Base.

Milestone C changed from September 2008 to December 2008 to match the date the Acquistion Decision Memorandum was signed. This was reported in the 2009 Selected Acquisition Report.

Performance

Characteristics	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Demonstrated Performance	Current Estimate
Enable the aircraft to employ weapons	Aircraft system level CEP shall not exceed the results from the baseline tests (2005-2006).	Aircraft system level CEP shall not exceed the results from the baseline tests (2005-2006).	Aircraft system level CEP shall not exceed the results from the baseline tests (2005-2006).	Demon-strated early 2008; IOT&E report accepted by DT&E 29 May; Beyond LRIP Report to Congress in Sep 09.	Weapon accuracy (CEP) IAW FY04-06 Force Development Evaluation results.
Enable location and characterization of atmospheric conditions					
Thunderstorms/Nuclear Debris	Avoid thunder-storms, with a min. rain rate of 1 mm/hr, by a min. of 40 NM; avoid nuclear debris clouds.	Avoid thunder-storms, with a min. rain rate of 1 mm/hr, by a min. of 40 NM; avoid nuclear debris clouds.	Avoid thunder-storms, with a min. rain rate of 1 mm/hr, by a min. of 40 NM; avoid nuclear debris clouds.	Demon-strated thunder-storm short range perform-ance. Compliant via flight tests and data analysis. IOT&E report, accepted by DOT&E on 29 May 09. Nuclear debris is part of Mode Set 2 flight testing which completed in Apr 09. FOT&E in Sep 09 to test Mode Set 2.	Avoid thunder-storms, with a minimumrain rate of 1 mm/hr, by a minimum of 40 NM; avoid nuclear debris clouds.
Rainfall/Debris Density	Display green, yellow and red bands based on	Display green, yellow and red bands based on	Display green, yellow and red bands based on	Compliant via flight tests and data analysis.	Display green, yellow and red bands based on

	rainfall rates and debris density out to 160 NM. Avoid thunder-storms, with a min. rain rate of 1mm/hr, by a min. of 40 NM.	rainfall rates and debris density out to 160 NM. Avoid thunder-storms, with a min. rain rate of 1mm/hr, by a min. of 40 NM.	rainfall rates and debris density out to 160 NM. Avoid thunder-storms, with a minimum rain rate of 1mm/hr, by a minimum of 40 NM.	IOT&E report, accepted by DOT&E on 29 May 09.	rainfall rates and debris density out to 160 NM
Shall not diminish current B-2 penetration capabilities and survivability characteristics	a) Once modified, the aircraft shall not exceed the values in App 70 of the Weapon System Specification b) Improve performance.	a) Once modified, the aircraft shall not exceed the values in App 70 of the Weapon System Specification b) Improve performance.	a) Once modified, the aircraft shall not exceed the values in App 70 of the Weapon System Specification b) LPI performance of RMP shall meet the performance of the legacy radar when tested under similar conditions.	LO flight test conducted in May 07; LPI flight tests in Jul & Aug 08. Peformance met expectations.	a) B-2 RMP installation meets the Block 30 Appendix 70 specification for the current radar's portion of the LO budget; b) LPI performance to Block 30 radar I/FOT&E and FDE test results
Shall comply with spectrum management directives	Achieve and comply with DD1494 Stage 3 Certification prior to range testing; achieve and comply with DD1494 Stage 4 Certification prior to initial operational capability.	Achieve and comply with DD1494 Stage 3 Certification prior to range testing; achieve and comply with DD1494 Stage 4 Certification prior to initial operational capability.	Achieve and comply with DD1494 Stage 3 Certification prior to range testing; achieve and comply with DD1494 Stage 4 Certification prior to initial operational capability.	Stage 4 application submitted; in review at 88th Comm Grp; no issues. Planned to be signed by Apr 2010.	Achieve and comply with DD1494 Stage 3 Certification prior to range testing; achieve and comply with DD1494 Stage 4 Certification prior to initial operaltional capability.
Shall not degrade situational awareness--tanker rendezvous, station keeping, and air-traffic capability	a) Detect a tanker at up to Y NM. (see classified App); b)	a) Detect a tanker at up to Y NM. (see classified App); b)	a) Detect a tanker in RWS and lock on in AAT by X NM (see	Flight tested in May 08. Significant capability to detect/track/ rendezvous	Minimum capability of 80NM with positional accuracy to ensure safe

	Enable the B-2 to maintain 0.5 NM min. separation using the 5 NM scope.	Enable the B-2 to maintain 0.5 NM min. separation using the 5 NM scope.	classified App); b) Enable the B-2 to maintain 0.5 NM min. separation using the 5 NM scope.	with tanker, station keeping and air traffic situational awareness has been demonstrated. IOT&E report accepted by DT&E May 29, 2009; Beyond LRIP Report to Congress.	separation of at least 0.5NM
All top-level IERs will be satisfied to the standards specified in the thresholds and objective values	100% of top-level IERs	100% of top-level IERs	100% of top-level IERs designated critical	TBD	100% of top-level IERs

Requirements Source:
Capability Production Document (CPD) for B-2 Radar Modernization Program (RMP), validated July 11, 2006.

Acronyms And Abbreviations

AAT - Air to Air Track
App - Appendix
CEP - Circular Error Probability
DOT&E - Director, Operational Test & Evaluation
DT&E - Developmental Test & Evaluation
FDE - Force Development Evaluation
hr - hour
I/FOT&E - Initial and Follow-on Operational Test & Evaluation
IAW - In Accordance With
IER - Information Exchange Requirement
KPP - Key Performance Parameter
LO - Low Observability
LPI - Low Probability of Intercept
Min - Minimum
mm - millimeter
NM - Nautical Miles
TBD - To Be Determined

Change Explanations

None

Memo

Classified Performance information is provided in the classified annex to this submission.

Track To Budget

General Memo

The funding for the B-2 Radar Modernization Program (RMP) is embedded within the primary B-2 Program Elements. These lines are shared with other B-2 programs that support the B-2 weapon system, which includes the B-2 Extremely High Frequency (EHF) Increment I program.

Aircraft Procurement, Air Force BA 05 line is shared for all B-2 Mods (B-2 RMP is Mod No. 110033 on the Exhibit P-40, Budget Item Justification). Funding for Initial Spares is in the shared BA 06 line.

RDT&E

APPN 3600	BA 07	PE 0101127F	(Air Force)	
	Project 5345	B-2 Advanced Technology Bomber/B-2 Advanced Technology Bomber	(Shared)	(Sunk)
APPN 3600	BA 05	PE 0604240F	(Air Force)	
	Project 3843	B-2 Advanced Technology Bomber/B-2 Advanced Technology Bomber	(Shared)	(Sunk)

Procurement

APPN 3010	BA 06	PE 0101127F	(Air Force)
	ICN 000999	B-2 Radar Modernization Program (RMP)	(Shared)
APPN 3010	BA 05	PE 0101127F	(Air Force)
	ICN B00200	B-2 Radar Modernization Program (RMP)	(Shared)

Cost and Funding

Cost Summary

Total Acquisition Cost and Quantity

	BY2008 $M			BY2008 $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	730.9	730.9	804.0	665.9	719.1	719.1	647.5
Procurement	593.6	593.6	653.0	555.4	629.3	629.3	577.6
Flyaway	481.1	--	--	515.2	508.7	--	535.0
Recurring	398.1	--	--	468.3	420.5	--	486.0
Non Recurring	83.0	--	--	46.9	88.2	--	49.0
Support	112.5	--	--	40.2	120.6	--	42.6
Other Support	88.0	--	--	15.0	93.7	--	15.6
Initial Spares	24.5	--	--	25.2	26.9	--	27.0
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	1324.5	1324.5	N/A	1221.3	1348.4	1348.4	1225.1

The RMP Full Rate Production (FRP) program office estimate was validated by the Air Force Cost Analysis Agency (AFCAA) on September 10, 2009. The cost estimate reflected a 55% confidence level due to the low risk of the production effort; the development cost estimate was based on actual costs incurred as the development program was more than 96% complete.

Quantity	SAR Baseline Prod Est	Current APB Production	Current Estimate
RDT&E	7	7	7
Procurement	13	13	13
Total	20	20	20

The unit of measure is modified aircraft.

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	647.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	647.5
Procurement	539.0	23.8	14.8	0.0	0.0	0.0	0.0	0.0	577.6
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	1186.5	23.8	14.8	0.0	0.0	0.0	0.0	0.0	1225.1
PB 2011 Total	1227.9	23.2	14.7	0.0	0.0	0.0	0.0	0.0	1265.8
Delta	-41.4	0.6	0.1	0.0	0.0	0.0	0.0	0.0	-40.7

Quantity	Undistributed	Prior	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	To Complete	Total
Development	7	0	0	0	0	0	0	0	0	7
Production	0	13	0	0	0	0	0	0	0	13
PB 2012 Total	7	13	0	0	0	0	0	0	0	20
PB 2011 Total	7	13	0	0	0	0	0	0	0	20
Delta	0	0	0	0	0	0	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
2005	--	--	--	--	--	--	170.7
2006	--	--	--	--	--	--	200.4
2007	--	--	--	--	--	--	93.2
2008	--	--	--	--	--	--	112.6
2009	--	--	--	--	--	--	69.6
2010	--	--	--	--	--	--	1.0
Subtotal	**7**	**--**	**--**	**--**	**--**	**--**	**647.5**

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

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2008 $M	Non End Item Recurring Flyaway BY 2008 $M	Non Recurring Flyaway BY 2008 $M	Total Flyaway BY 2008 $M	Total Support BY 2008 $M	Total Program BY 2008 $M
2005	--	--	--	--	--	--	182.6
2006	--	--	--	--	--	--	208.1
2007	--	--	--	--	--	--	94.3
2008	--	--	--	--	--	--	111.7
2009	--	--	--	--	--	--	68.2
2010	--	--	--	--	--	--	1.0
Subtotal	**7**	**--**	**--**	**--**	**--**	**--**	**665.9**

Annual Funding TY$
3010 | Procurement | Aircraft 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
2008	--	57.9	--	0.5	58.4	1.6	60.0
2009	6	253.4	1.1	26.4	280.9	6.8	287.7
2010	7	165.8	1.3	21.1	188.2	3.1	191.3
2011	--	--	4.9	1.0	5.9	17.9	23.8
2012	--	--	1.6	--	1.6	13.2	14.8
Subtotal	**13**	**477.1**	**8.9**	**49.0**	**535.0**	**42.6**	**577.6**

Annual Funding BY$
3010 | Procurement | Aircraft Procurement, Air Force

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2008 $M	Non End Item Recurring Flyaway BY 2008 $M	Non Recurring Flyaway BY 2008 $M	Total Flyaway BY 2008 $M	Total Support BY 2008 $M	Total Program BY 2008 $M
2008	--	56.8	--	0.5	57.3	1.6	58.9
2009	6	245.1	1.1	25.4	271.6	6.6	278.2
2010	7	158.0	1.2	20.1	179.3	3.0	182.3
2011	--	--	4.6	0.9	5.5	16.8	22.3
2012	--	--	1.5	--	1.5	12.2	13.7
Subtotal	**13**	**459.9**	**8.4**	**46.9**	**515.2**	**40.2**	**555.4**

Cost Quantity Information
3010 | Procurement | Aircraft Procurement, Air Force

Fiscal Year	Quantity	End Item Recurring Flyaway (Aligned with Quantity) BY 2008 $M
2008	--	--
2009	6	242.3
2010	7	217.6
2011	--	--
2012	--	--
Subtotal	**13**	**459.9**

Low Rate Initial Production

	Initial LRIP Decision	Current Total LRIP
Approval Date	8/17/2004	9/4/2008
Approved Quantity	4	6
Reference	Milestone B	Milestone C
Start Year	2007	2008
End Year	2007	2009

RMP Milestone C Decision was accomplished in September 2008. The Air Force aligned funding in FY 2009 President's Budget (PB) to support the purchase of six Low Rate Initial Production (LRIP) ship sets in FY 2009 and seven Full Rate Production (FRP) ship sets in FY 2010. The LRIP quantity is greater than 10% due to the small fleet size.

Foreign Military Sales

None

Nuclear Cost

None

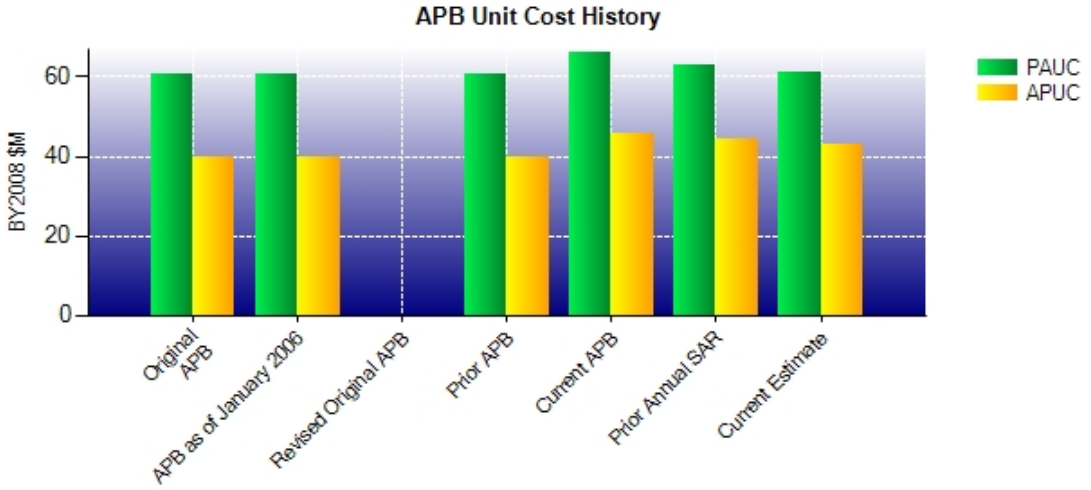
Unit Cost

Unit Cost Report

Unit Cost	BY2008 $M Current UCR Baseline (JAN 2009 APB)	BY2008 $M Current Estimate (DEC 2010 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	1324.5	1221.3	
Quantity	20	20	
Unit Cost	66.225	61.065	-7.79
Average Procurement Unit Cost (APUC)			
Cost	593.6	555.4	
Quantity	13	13	
Unit Cost	45.662	42.723	-6.44

Unit Cost	BY2008 $M Original UCR Baseline (AUG 2004 APB)	BY2008 $M Current Estimate (DEC 2010 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	1273.8	1221.3	
Quantity	21	20	
Unit Cost	60.657	61.065	+0.67
Average Procurement Unit Cost (APUC)			
Cost	559.0	555.4	
Quantity	14	13	
Unit Cost	39.929	42.723	+7.00

Unit Cost History



		BY2008 $M		TY $M	
	Date	PAUC	APUC	PAUC	APUC
Original APB	AUG 2004	60.657	39.929	58.095	39.150
APB as of January 2006	AUG 2004	60.657	39.929	58.095	39.150
Revised Original APB	N/A	N/A	N/A	N/A	N/A
Prior APB	AUG 2004	60.657	39.929	58.095	39.150
Current APB	JAN 2009	66.225	45.662	67.420	48.408
Prior Annual SAR	DEC 2009	63.005	44.185	63.290	45.992
Current Estimate	DEC 2010	61.065	42.723	61.255	44.431

SAR Unit Cost History

Initial SAR Baseline to Current SAR Baseline (TY $M)

Initial PAUC Dev Est	Changes								PAUC Prod Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
58.095	1.795	1.040	5.845	2.110	-5.515	0.000	-0.080	5.195	67.420

Current SAR Baseline to Current Estimate (TY $M)

PAUC Prod Est	Changes								PAUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
67.420	-0.795	0.000	0.000	0.000	-1.585	0.000	-3.785	-6.165	61.255

Initial SAR Baseline to Current SAR Baseline (TY $M)

Initial APUC Dev Est	Changes								APUC Prod Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
39.150	1.408	0.142	1.377	1.715	2.323	0.000	-0.123	6.842	48.408

Current SAR Baseline to Current Estimate (TY $M)

APUC Prod Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
48.408	-0.869	0.000	0.000	0.000	2.715	0.000	-5.823	-3.977	44.431

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	JUL 2004	SEP 2004	AUG 2004
Milestone C	N/A	FEB 2007	SEP 2008	DEC 2008
IOC	N/A	OCT 2007	DEC 2009	MAR 2010
Total Cost (TY $M)	N/A	1220.0	1348.4	1225.1
Total Quantity	N/A	21	20	20
Prog. Acq. Unit Cost (PAUC)	N/A	58.095	67.420	61.255

Required Assets Available (RAA) is used in place of Initial Operational Capability (IOC) date in the table above. RAA is defined as sufficient support equipment, spares, hardware, and fully qualified Mode Set 1 software to support five operational aircraft at Whiteman Air Force Base.

Cost Variance

Cost Variance Summary

Summary Then Year $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Prod Est)	719.1	629.3	--	1348.4
Previous Changes				
Economic	-4.6	-10.9	--	-15.5
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-46.6	+51.7	--	+5.1
Other	--	--	--	--
Support	--	-72.2	--	-72.2
Subtotal	-51.2	-31.4	--	-82.6
Current Changes				
Economic	--	-0.4	--	-0.4
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-20.4	-16.4	--	-36.8
Other	--	--	--	--
Support	--	-3.5	--	-3.5
Subtotal	-20.4	-20.3	--	-40.7
Total Changes	-71.6	-51.7	--	-123.3
CE - Cost Variance	647.5	577.6	--	1225.1
CE - Cost & Funding	647.5	577.6	--	1225.1

Summary Base Year 2008 $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Prod Est)	730.9	593.6	--	1324.5
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-45.2	+50.0	--	+4.8
Other	--	--	--	--
Support	--	-69.2	--	-69.2
Subtotal	-45.2	-19.2	--	-64.4
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-19.8	-15.9	--	-35.7
Other	--	--	--	--
Support	--	-3.1	--	-3.1
Subtotal	-19.8	-19.0	--	-38.8
Total Changes	-65.0	-38.2	--	-103.2
CE - Cost Variance	665.9	555.4	--	1221.3
CE - Cost & Funding	665.9	555.4	--	1221.3

Previous Estimate: December 2009

RDT&E	$M	
Current Change Explanations	**Base Year**	**Then Year**
Decrease due to Air Force withhold for higher priority programs (Estimating)	-15.0	-15.5
Revised program office estimate to reflect reduced costs to complete two replacement antennas, contractor program management, and overhead charges (Estimating)	-4.8	-4.9
RDT&E Subtotal	-19.8	-20.4

Procurement	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	-0.4
Adjustment for current and prior escalation. (Estimating)	0.0	+0.2
Decrease to program office estimate to reflect reduced cost to complete production retrofits, receiver/exciter risk mitigation, and change orders (Estimating)	-11.8	-12.2
Decrease due to Air Force withhold to fund higher priority requirements (Estimating)	-4.1	-4.4
Adjustment for current and prior escalation. (Support)	+0.3	+0.1
Decrease in Other Support due to reduced costs for Program Management Administration (PMA) costs (Support)	-3.2	-3.3
Decrease in Initial Spares due to reduced costs in FY 2012. (Support)	-0.2	-0.3
Procurement Subtotal	-19.0	-20.3

Contracts

Appropriation: Procurement	
Contract Name	**B-2 Radar Modernization Program Production Phase**
Contractor	Northrop Grumman Corporation
Contractor Location	El Segundo, CA 90245
Contract Number, Type	F33657-99-D-0028/41, FPIF
Award Date	December 29, 2008
Definitization Date	December 29, 2008

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
232.5	241.8	13	462.6	481.1	13	463.8	462.6

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date	+18.9	+1.1
Previous Cumulative Variances	+12.5	+27.2
Net Change	+6.4	-26.1

Cost And Schedule Variance Explanations

The net favorable schedule change is due to early delivery of materials for Full Rate Production (FRP) antenna work package by the subcontractor. The net favorable cost change was driven by actual material procurement costs being lower than planned and efficiencies in manufacturing processes that led to higher yeilds and less scrapped material. In addition, the cost change is driven by increased efficiencies in the program office, engineering, and supply chain support.

Contract Comments

Contract performance data is based on the January 4, 2011 Contract Performance Report which includes data as of December 3, 2010.

The change in current contract price from the initial contract price is due to the exercise of the Full Rate Production option, as well as a contract option for eight kit installs.

Deliveries and Expenditures

Deliveries To Date	Plan To Date	Actual To Date	Total Quantity	Percent Delivered
Development	7	7	7	100.00%
Production	2	2	13	15.38%
Total Program Quantities Delivered	9	9	20	45.00%

Expenditures and Appropriations (TY $M)			
Total Acquisition Cost	1225.1	Years Appropriated	7
Expenditures To Date	960.0	Percent Years Appropriated	87.50%
Percent Expended	78.36%	Appropriated to Date	1210.3
Total Funding Years	8	Percent Appropriated	98.79%

Operating and Support Cost

Assumptions And Ground Rules

There no Operating and Support (O&S) costs for B-2 RMP since it is forecasted to be lower than the legacy radar system, due mostly to the higher expected reliability of the RMP antenna and the deletion of the high-maintenance transmitter.

The maintenance concept for the B-2 RMP will be the same as the legacy radar system, which has two levels (organizational and depot). Organizational maintenance will consist of Air Force maintenance personnel removing and replacing failed items, performing preventative maintenance, and conducting fault isolation actions. All repairs of Line Replaceable Units removed from B-2 aircraft will be accomplished at the depot level.

The supply support concept and the manpower and personnel requirements for the B-2 RMP will remain the same as for the legacy radar system.

The expected B-2 RMP O&S costs by element were analyzed where a delta from legacy requirements is projected. The only element expected to change in the transition from Legacy B-2 to B-2 RMP is Depot Maintenance. The Average Annual costs per Air Vehicle, for Legacy B-2 affected subsystems, is $0.2 (FY 2004 Constant (Base-Year) Dollars in Millions). The Average Annual costs per Air Vehicle, for B-2 RMP affected subsystems, is $0.1 (FY 2004 Constant (Base-Year) Dollars in Millions). There is no antecedent system for this modification. Air Force Cost Analysis Full Rate Production Decision O&S estimate has not changed from the Milestone C estimate.

Costs BY2008 $M		
Cost Element	**B-2 RMP N/A**	**No Antecedent N/A**
Unit-Level Manpower	--	--
Unit Operations	--	--
Maintenance	--	--
Sustaining Support	--	--
Continuing System Improvements	--	--
Indirect Support	--	--
Other	--	--
Total Unitized Cost (Base Year 2008 $)	--	--

Total O&S Costs $M	B-2 RMP	No Antecedent
Base Year	--	--
Then Year	--	--