Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-277

Airborne Warning and Control System Block 40/45 Upgrade (AWACS Blk 40/45 Upgrade)

As of December 31, 2012

Defense Acquisition Management
Information Retrieval
(DAMIR)

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Program Information

Program Name

Airborne Warning and Control System Block 40/45 Upgrade (AWACS Blk 40/45 Upgrade)

DoD Component

Air Force

Responsible Office

Responsible Office

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Date Assigned June 28, 2012

References

SAR Baseline (Production Estimate)

Reference is not available.

Approved APB

Air Force Acquisition Executive (AFAE) Approved Acquisition Program Baseline (APB) dated May 1, 2013

Mission and Description

The Airborne Warning and Control System (AWACS) provides a highly mobile, flexible, survivable theater Battle Management (BM), Wide Area Surveillance (WAS), and Command and Control (C2) capability. It is capable of detecting, identifying, and tracking airborne and maritime targets at extended ranges as well as identifying air/ground emitters. AWACS can relay “big picture” information to C2 agencies and friendly aircraft. AWACS provides worldwide response to situations requiring immediate on-scene C2/BM using embedded real-time surveillance for employment of US and allied combat air forces. AWACS is critical to gaining and maintaining battle-space air superiority. AWACS coordinates with both tactical and C2 assets in theater to execute the air mission.

The AWACS Block 40/45 Upgrade is the largest modification in US AWACS history and represents the critical foundation and baseline system required for all future AWACS enterprise modifications including net-centric operations. The AWACS Block 40/45 Upgrade provides a single target/single track capability with an improved human-machine interface for time-critical targeting designed to increase combat effectiveness and reduce fratricide. The AWACS Block 40/45 Upgrade includes an upgrade to Electronic Support Measures (ESM) sensor data processing; multi-source integration (MSI); a Data Link Infrastructure (DLI) with prioritized data link bandwidth management for Link 16/Link 11; new battle management tools; capability to parse, allow user access to, and integrate Air Control Order/Air Tasking Order (ACO/ATO) data; and enhanced mission and console recording capabilities.

Executive Summary

This is the initial SAR submission for the AWACS Block 40/45 Upgrade program.

During Calendar Year (CY) 2012, the AWACS Block 40/45 Upgrade program continued Low Rate Initial Production (LRIP) and received a positive Full Rate Production (FRP) Decision. The upgraded AWACS aircraft are redesignated from E-3B/C to E-3G. Significant accomplishments in CY 2012 include:

- Delivered the second E-3G to the 552nd Air Control Wing at Tinker Air Force Base (AFB), OK on March 20, 2012.
- Completed Initial Operational Test and Evaluation in June 2012.
- Inducted the fourth LRIP aircraft for modification at Tinker AFB, OK on September 11, 2012.
- Clinger-Cohen Act Compliance Memorandum signed on October 26, 2012.
- Completed FRP Decision Review on November 7, 2012.
- Delivered the third E-3G to the 552nd Air Control Wing at Tinker AFB, OK on December 1, 2012.
- Secretary of the Air Force (SecAF) signed Acquisition Strategy on December 12, 2012.
- SecAF signed Life Cycle Sustainment Plan on December 12, 2012.
- SecAF signed FRP Acquisition Decision Memorandum (ADM) on December 21, 2012.
- Awarded the FRP Basic contract to Boeing on December 27, 2012.

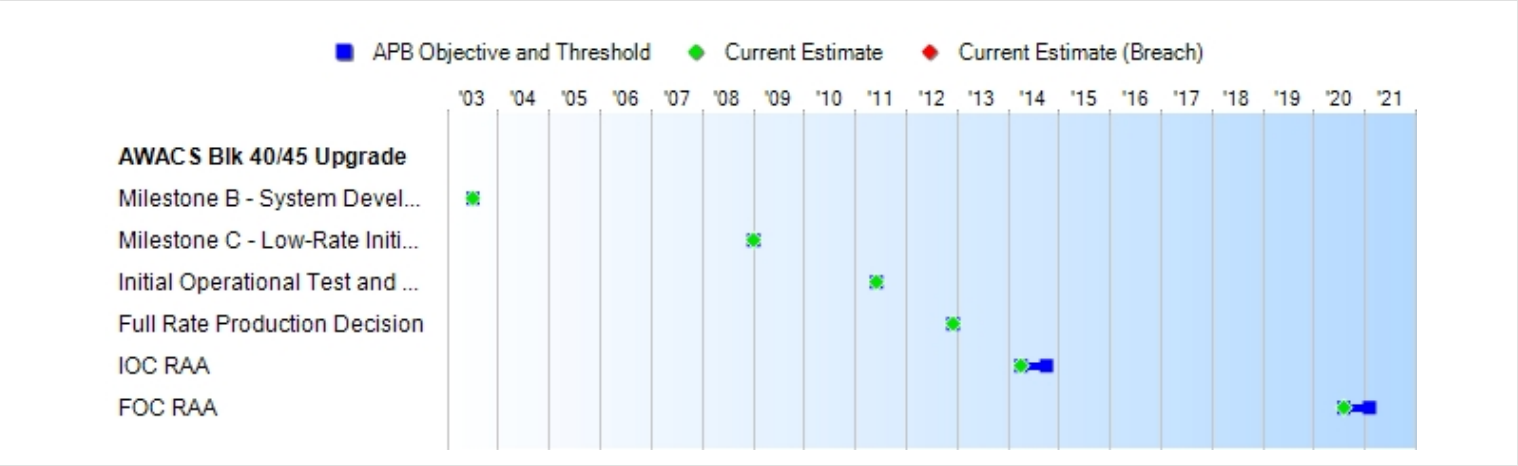
There are no significant software-related issues with this program at this time.

Threshold Breaches

APB Breaches		
Schedule		☐
Performance		☐
Cost	RDT&E	☐
	Procurement	☐
	MILCON	☐
	Acq O&M	☐
O&S Cost		☐
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 Prod Est	Current APB Production Objective/Threshold		Current Estimate
Milestone B - System Development and Demonstration	JUL 2003	JUL 2003	JUL 2003	JUL 2003
Milestone C - Low-Rate Initial Production	JAN 2009	JAN 2009	JAN 2009	JAN 2009
Initial Operational Test and Evaluation Complete	JUN 2011	JUN 2011	JUN 2011	JUN 2011
Full Rate Production Decision	DEC 2012	DEC 2012	DEC 2012	DEC 2012
IOC RAA	APR 2014	APR 2014	OCT 2014	APR 2014
FOC RAA	AUG 2020	AUG 2020	FEB 2021	AUG 2020

Acronyms And Abbreviations

FOC - Full Operational Capability
IOC - Initial Operational Capability
RAA - Required Assets Available

Change Explanations

None

Memo

1/ IOC RAA is the date five Block 40/45 E-3G Sentry Airborne Warning and Control System (AWACS) aircraft are delivered to Air Combat Command (ACC).

2/ FOC RAA is the date all Block 40/45 E-3G Sentry AWACS aircraft and associated ground systems are delivered to ACC.

Performance

Characteristics	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Demonstrated Performance	Current Estimate
Multi-Source Integration	All target data shall be correlated, fused, and integrated into a single track	All target data shall be correlated, fused, and integrated into a single track	(Objective = Threshold) All target data shall be correlated, fused, and integrated into a single track	TBD	Same as Threshold. All target data shall be correlated, fused, and integrated into a single track.
Net Ready	System must fully support execution of all activities identified in joint and system integrated architectures. 1) DISR mandated GIG IT standards and profiles identified in the TV-1. 2) DISR mandated GIG KIPs identified in the KIP declaration table. 3) Net-Centric Operations and Warfare Reference Model Enterprise Services. 4) IA requirements and issuance of an ATO by	System must fully support execution of all activities identified in joint and system integrated architectures. 1) DISR mandated GIG IT standards and profiles identified in the TV-1. 2) DISR mandated GIG KIPs identified in the KIP declaration table. 3) Net-Centric Operations and Warfare Reference Model Enterprise Services. 4) IA requirements and issuance of an ATO by	System must fully support execution of joint critical activities identified in joint and system integrated architectures. System must satisfy the technical requirements for future transition to Net-Centric operations to include: 1) DISR mandated GIG IT standards and profiles identified in the TV-1; 2) DISR mandated GIG KIPs identified in the KIP declaration table; 3) Net-Centric Operations	TBD	Same as Threshold. System must fully support execution of joint critical activities identified in joint and system integrated architectures. System must satisfy the technical requirements for future transition to Net-Centric operations to include: 1) DISR mandated GIG IT standards and profiles identified in the TV-1; 2) DISR mandated GIG KIPs identified in the KIP declaration table; 3) Net-

	the DAA. 5) Operationally-effective information exchanges and mission critical performance specified in the applicable joint and system integrated architecture views.	the DAA. 5) Operationally-effective information exchanges and mission critical performance specified in the applicable joint and system integrated architecture views.	and Warfare Reference Model Enterprise Services; 4) IA requirements and issuance of an IATO by the DAA; 5) Operationally-effective information exchanges and mission critical performance specified in the applicable joint and system integrated architecture views.		Centric Operations and Warfare Reference Model Enterprise Services; 4) IA requirements and issuance of an IATO by the DAA; 5) Operationally-effective information exchanges and mission critical performance specified in the applicable joint and system integrated architecture views.

Requirements Source: Operational Requirements Document (ORD) (Combat Air Forces (CAF) 010-02-I/II) dated June 16, 2009 (in lieu of Capability Production Document) (CPD))

Acronyms And Abbreviations

ATO - Approval to Operate
DAA - Designated Accrediting Authority
DISR - Department of Defense Information Technology Standards and Profile Registry
GIG - Global Information Grid
IA - Information Assurance
IATO - Interim Approval to Operate
ID - Identify
IT - Information Technology
KIP - Key Interface Profile
TV-1 - Technical View 1

Change Explanations

None

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

Track To Budget

RDT&E			
APPN 3600	BA 07	PE 0207417F	(Air Force)
	Project 67411L	AWACS	(Shared)

Procurement			
APPN 3010	BA 06	PE 0207417F	(Air Force)
	ICN 000999	Initial Spares	(Shared)
APPN 3010	BA 07	PE 0207417F	(Air Force)
	ICN E00300	AWACS	(Shared)

The Procurement funding for the AWACS Block 40/45 Upgrade program is located in Modification number 50001T.

Cost and Funding

Cost Summary

Total Acquisition Cost and Quantity

Appropriation	BY2012 $M			BY2012 $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	1319.0	1319.0	1450.9	1305.8	1192.2	1192.2	1179.2
Procurement	1503.4	1503.4	1653.7	1448.1	1615.4	1615.4	1573.9
Flyaway	1461.8	--	--	1398.2	1571.2	--	1519.8
Recurring	1154.6	--	--	1112.6	1239.5	--	1207.4
Non Recurring	307.2	--	--	285.6	331.7	--	312.4
Support	41.6	--	--	49.9	44.2	--	54.1
Other Support	0.0	--	--	0.0	0.0	--	0.0
Initial Spares	41.6	--	--	49.9	44.2	--	54.1
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	2822.4	2822.4	N/A	2753.9	2807.6	2807.6	2753.1

Confidence Level for Current APB Cost 54% -

The life-cycle cost estimate (LCCE) confidence level of 54% reflects the expected value, or mean, of the cost estimate distribution. It takes into consideration relevant risks, including ordinary levels of external and unforeseen events, aiming to provide sufficient resources to execute the program under normal conditions encountering average levels of technical, schedule, and programmatic risk and external influence.

Quantity	SAR Baseline Prod Est	Current APB Production	Current Estimate
RDT&E	0	0	0
Procurement	31	31	31
Total	31	31	31

Cost and Funding

Funding Summary

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

Appropriation	Prior	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	To Complete	Total
RDT&E	1145.6	5.7	27.9	0.0	0.0	0.0	0.0	0.0	1179.2
Procurement	426.4	180.7	176.5	188.7	206.9	206.3	142.1	46.3	1573.9
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	1572.0	186.4	204.4	188.7	206.9	206.3	142.1	46.3	2753.1
	--	--	--	--	--	--	--	--	--

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	11	2	4	5	3	5	1	0	31
PB 2014 Total	0	11	2	4	5	3	5	1	0	31
	--	--	--	--	--	--	--	--	--	--

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
1999	--	--	--	--	--	--	0.9
2000	--	--	--	--	--	--	14.2
2001	--	--	--	--	--	--	10.1
2002	--	--	--	--	--	--	17.8
2003	--	--	--	--	--	--	116.0
2004	--	--	--	--	--	--	193.0
2005	--	--	--	--	--	--	243.7
2006	--	--	--	--	--	--	106.3
2007	--	--	--	--	--	--	127.9
2008	--	--	--	--	--	--	90.7
2009	--	--	--	--	--	--	69.9
2010	--	--	--	--	--	--	50.1
2011	--	--	--	--	--	--	85.4
2012	--	--	--	--	--	--	19.6
2013	--	--	--	--	--	--	5.7
2014	--	--	--	--	--	--	27.9
Subtotal	**--**	**--**	**--**	**--**	**--**	**--**	**1179.2**

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

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2012 $M	Non End Item Recurring Flyaway BY 2012 $M	Non Recurring Flyaway BY 2012 $M	Total Flyaway BY 2012 $M	Total Support BY 2012 $M	Total Program BY 2012 $M
1999	--	--	--	--	--	--	1.1
2000	--	--	--	--	--	--	17.6
2001	--	--	--	--	--	--	12.4
2002	--	--	--	--	--	--	21.6
2003	--	--	--	--	--	--	138.7
2004	--	--	--	--	--	--	225.1
2005	--	--	--	--	--	--	277.2
2006	--	--	--	--	--	--	117.4
2007	--	--	--	--	--	--	137.6
2008	--	--	--	--	--	--	95.6
2009	--	--	--	--	--	--	72.7
2010	--	--	--	--	--	--	51.5
2011	--	--	--	--	--	--	86.0
2012	--	--	--	--	--	--	19.4
2013	--	--	--	--	--	--	5.5
2014	--	--	--	--	--	--	26.4
Subtotal	**--**	**--**	**--**	**--**	**--**	**--**	**1305.8**

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	--	--	0.2	2.4	2.6	--	2.6
2009	1	32.5	15.3	13.4	61.2	2.9	64.1
2010	2	45.7	6.5	12.1	64.3	0.5	64.8
2011	5	143.2	4.8	30.0	178.0	2.8	180.8
2012	3	97.7	9.0	3.8	110.5	3.6	114.1
2013	2	117.1	8.7	47.1	172.9	7.8	180.7
2014	4	112.4	26.4	30.1	168.9	7.6	176.5
2015	5	90.2	49.4	33.6	173.2	15.5	188.7
2016	3	115.1	35.6	47.1	197.8	9.1	206.9
2017	5	122.3	45.4	35.8	203.5	2.8	206.3
2018	1	82.3	5.4	52.9	140.6	1.5	142.1
2019	--	--	41.4	3.1	44.5	--	44.5
2020	--	--	0.8	1.0	1.8	--	1.8
Subtotal	**31**	**958.5**	**248.9**	**312.4**	**1519.8**	**54.1**	**1573.9**

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

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2012 $M	Non End Item Recurring Flyaway BY 2012 $M	Non Recurring Flyaway BY 2012 $M	Total Flyaway BY 2012 $M	Total Support BY 2012 $M	Total Program BY 2012 $M
2008	--	--	0.2	2.5	2.7	--	2.7
2009	1	33.3	15.6	13.7	62.6	3.0	65.6
2010	2	45.8	6.5	12.2	64.5	0.5	65.0
2011	5	141.0	4.7	29.5	175.2	2.8	178.0
2012	3	94.3	8.6	3.7	106.6	3.5	110.1
2013	2	110.0	8.2	44.2	162.4	7.3	169.7
2014	4	103.6	24.3	27.8	155.7	7.0	162.7
2015	5	81.6	44.7	30.4	156.7	14.0	170.7
2016	3	102.2	31.6	41.7	175.5	8.1	183.6
2017	5	106.5	39.6	31.2	177.3	2.4	179.7
2018	1	70.3	4.6	45.3	120.2	1.3	121.5
2019	--	--	34.7	2.6	37.3	--	37.3
2020	--	--	0.7	0.8	1.5	--	1.5
Subtotal	**31**	**888.6**	**224.0**	**285.6**	**1398.2**	**49.9**	**1448.1**

Low Rate Initial Production

	Initial LRIP Decision	Current Total LRIP
Approval Date	11/24/2008	11/24/2008
Approved Quantity	6	6
Reference	Milestone C ADM	Milestone C ADM
Start Year	2009	2009
End Year	2010	2010

The Current Total LRIP Quantity is more than 10% of the total production quantity due to operational requirements.

Air Combat Command identified a requirement for five AWACS Block 40/45 Upgrade aircraft for declaration of Initial Operational Capability. The program office requested an LRIP quantity of six, utilizing the first modified aircraft as a risk reduction effort to streamline the process of combining a major upgrade with Programmed Depot Maintenance.

Foreign Military Sales

None

Nuclear Cost

None

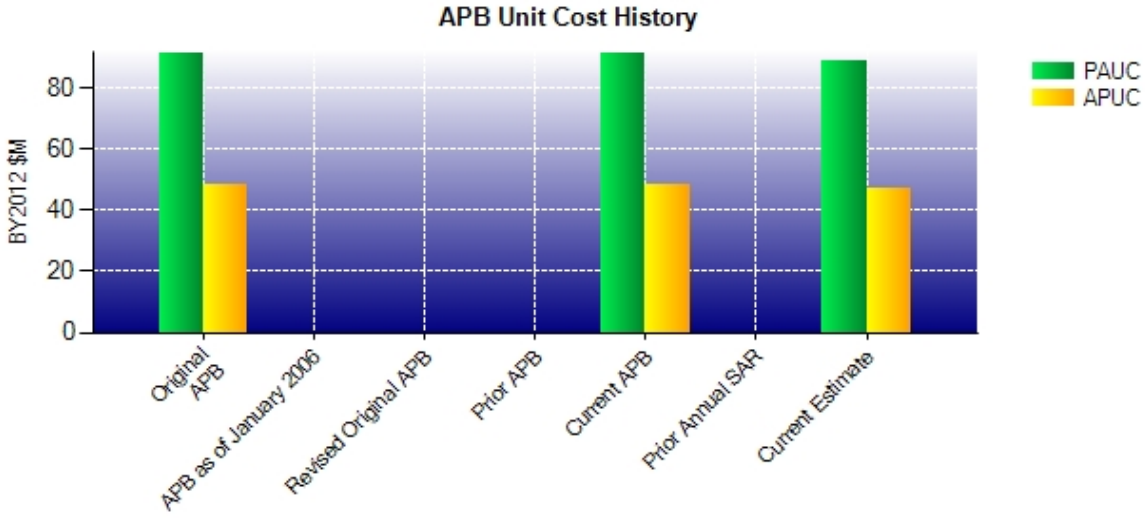
Unit Cost

Unit Cost Report

Unit Cost	BY2012 $M Current UCR Baseline (MAY 2013 APB)	BY2012 $M Current Estimate (DEC 2012 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	2822.4	2753.9	
Quantity	31	31	
Unit Cost	91.045	88.835	-2.43
Average Procurement Unit Cost (APUC)			
Cost	1503.4	1448.1	
Quantity	31	31	
Unit Cost	48.497	46.713	-3.68

Unit Cost	BY2012 $M Original UCR Baseline (MAY 2013 APB)	BY2012 $M Current Estimate (DEC 2012 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	2822.4	2753.9	
Quantity	31	31	
Unit Cost	91.045	88.835	-2.43
Average Procurement Unit Cost (APUC)			
Cost	1503.4	1448.1	
Quantity	31	31	
Unit Cost	48.497	46.713	-3.68

Unit Cost History



		BY2012 $M		TY $M	
	Date	PAUC	APUC	PAUC	APUC
Original APB	MAY 2013	91.045	48.497	90.568	52.110
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	N/A	N/A	N/A	N/A	N/A
Current APB	MAY 2013	91.045	48.497	90.568	52.110
Prior Annual SAR	N/A	N/A	N/A	N/A	N/A
Current Estimate	DEC 2012	88.835	46.713	88.810	50.771

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	
90.568	0.703	0.000	-0.277	0.000	-2.490	0.000	0.306	-1.758	88.810

Current SAR Baseline to Current Estimate (TY $M)

Initial APUC Prod Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
52.110	0.690	0.000	-0.277	0.000	-2.058	0.000	0.306	-1.339	50.771

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	N/A	JUL 2003	JUL 2003
Milestone C	N/A	N/A	JAN 2009	JAN 2009
IOC	N/A	N/A	APR 2014	APR 2014
Total Cost (TY $M)	N/A	N/A	2807.6	2753.1
Total Quantity	N/A	N/A	31	31
Prog. Acq. Unit Cost (PAUC)	N/A	N/A	90.568	88.810

Cost Variance

Summary Then Year $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Prod Est)	1192.2	1615.4	--	2807.6
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	--	--	--	--
Other	--	--	--	--
Support	--	--	--	--
Subtotal	--	--	--	--
Current Changes				
Economic	+0.4	+21.4	--	+21.8
Quantity	--	--	--	--
Schedule	--	-8.6	--	-8.6
Engineering	--	--	--	--
Estimating	-13.4	-63.8	--	-77.2
Other	--	--	--	--
Support	--	+9.5	--	+9.5
Subtotal	-13.0	-41.5	--	-54.5
Total Changes	-13.0	-41.5	--	-54.5
CE - Cost Variance	1179.2	1573.9	--	2753.1
CE - Cost & Funding	1179.2	1573.9	--	2753.1

Summary Base Year 2012 $M				
	RDT&E	**Proc**	**MILCON**	**Total**
SAR Baseline (Prod Est)	1319.0	1503.4	--	2822.4
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	--	--	--	--
Other	--	--	--	--
Support	--	--	--	--
Subtotal	--	--	--	--
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-13.2	-63.6	--	-76.8
Other	--	--	--	--
Support	--	+8.3	--	+8.3
Subtotal	-13.2	-55.3	--	-68.5
Total Changes	-13.2	-55.3	--	-68.5
CE - Cost Variance	1305.8	1448.1	--	2753.9
CE - Cost & Funding	1305.8	1448.1	--	2753.9

Initial SAR - Above variances (if any) reflect changes since the SAR Baseline/APB.

RDT&E	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+0.4
Adjustment for current and prior escalation. (Estimating)	-0.1	-0.1
Revised estimate to reflect application of new escalation indices. (Estimating)	-0.3	-0.3
Revised estimate to remove airborne trainer system. (Estimating)	-12.8	-13.0
RDT&E Subtotal	-13.2	-13.0

Procurement	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+21.4
Funded ship sets with prior year funds. (Schedule)	0.0	-8.6
Adjustment for current and prior escalation. (Estimating)	-3.4	-3.7
Revised estimate to reflect application of new escalation indices. (Estimating)	-15.4	-17.3
Decreased funding FY 2013 ship sets with prior year funds resulted in updates to ship set procurement estimates in FY 2011, FY 2012, FY 2013, FY 2014 and FY 2018. (Estimating)	-44.8	-42.8
Adjustment for current and prior escalation. (Support)	-0.2	-0.1
Increase in Initial Spares reflect Budget Authority approved spares versus estimated required spares. (Support)	+8.5	+9.6
Procurement Subtotal	-55.3	-41.5

Contracts

Appropriation: Procurement	
Contract Name	**AWACS 40/45 Upgrade Full Rate Production**
Contractor	The Boeing Company
Contractor Location	P.O. Box 3707 Seattle, WA 98124-2207
Contract Number, Type	F19628-01-D-0016/26, FPIF
Award Date	November 18, 2011
Definitization Date	November 18, 2011

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
173.1	N/A	N/A	173.1	N/A	N/A	173.1	173.1

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date	0.0	0.0
Previous Cumulative Variances	--	--
Net Change	+0.0	+0.0

Cost And Schedule Variance Explanations

None

General Contract Variance Explanation

The AWACS Block 40/45 Ugrade program awarded the FRP basic contract on December 27, 2012. The FRP basic contract is an incentive type and has not commenced reporting at this time. The Initial Baseline Review (IBR) is planned for July 2013 and reporting is projected to commence 30 days after IBR is complete.

Contract Comments

This is the first time this contract is being reported.

This contract procures parts that are installed by the depot during Programmed Depot Maintenance.

Deliveries and Expenditures

Deliveries To Date	Plan To Date	Actual To Date	Total Quantity	Percent Delivered
Development	0	0	0	--
Production	3	3	31	9.68%
Total Program Quantities Delivered	3	3	31	9.68%

Expenditures and Appropriations (TY $M)			
Total Acquisition Cost	2753.1	Years Appropriated	15
Expenditures To Date	1178.8	Percent Years Appropriated	68.18%
Percent Expended	42.82%	Appropriated to Date	1758.4
Total Funding Years	22	Percent Appropriated	63.87%

The above data is current as of 3/31/2013.

Operating and Support Cost

AWACS Blk 40/45 Upgrade

Assumptions and Ground Rules

Cost Estimate Reference:

O&S estimate is based on Airborne Warning and Control System (AWACS) Block 40/45 Upgrade recommended Service Cost Position as of November 6, 2012.

Sustainment Strategy:

- AWACS E-3G life cycle is 2011 through 2035, and a total quantity of 31 aircraft.
- Production will leave the AWACS fleet with two Commercial Off The Shelf (COTS) Diminishing Manufacturing Sources (DMS) versions (DMS 3.0 and DMS 4.0) going into the O&S phase
- DMS tech refresh every 5 years starting in FY2019 through life of program
- O&S COTS procured with 3400 funding
- O&S COTS installed by Air Logistics Center (ALC) during Programmed Depot Maintenance or a dedicated modification installation line
- Software maintained organically with contractor support/partnership
- COTS, active DMS and DMS refreshes done with contractor partnership
- No modifications or capability upgrades included other than planned DMS tech refresh

Antecedent Information:

The AWACS Block 30/35 O&S cost based on historical Block 30/35 O&S cost projected through 2035. Used for comparison to Block 40/45 O&S cost. Assumes the Block 30/35 can be maintained through 2035 and assumes no major DMS issues (Status Quo).

Unitized O&S Costs BY2012 $M		
Cost Element	**AWACS Blk 40/45 Upgrade Yearly Average per Aircraft**	**AWACS Blk 30/35 (Antecedent) Yearly Average per Aircraft**
Unit-Level Manpower	10.7	10.7
Unit Operations	5.8	5.8
Maintenance	8.5	7.7
Sustaining Support	1.0	0.9
Continuing System Improvements	1.1	0.6
Indirect Support	2.8	2.8
Other	0.0	0.0
Total	29.9	28.5

Unitized Cost Comments:

Average annual cost per AWACS aircraft (31) (entire platform). Calculated by taking the total AWACS system cost and dividing by the life of the platform (2011-2035, 24 years) and then dividing by the total quantity of aircraft (31).

	Total O&S Cost $M			
	Current Production APB Objective/Threshold		Current Estimate	
	AWACS Blk 40/45 Upgrade		AWACS Blk 40/45 Upgrade	AWACS Blk 30/35 (Antecedent)
Base Year	1064.8	1171.2	1064.0	22102.0
Then Year	1377.8	N/A	1377.0	25275.0

Total O&S Costs Comments:

The AWACS Block 40/45 Upgrade Current Estimate is the delta cost from the AWACS Block 30/35 (Antecedent) Current Estimate, reflecting the total O&S cost of the AWACS Enterprise.

Disposal Costs

No disposal cost included.