



## 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 FY 2017 President's Budget

Defense Acquisition Management  
Information Retrieval  
(DAMIR)

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## Common Acronyms and Abbreviations for MDAP Programs

Acq O&M - Acquisition-Related Operations and Maintenance  
ACAT - Acquisition Category  
ADM - Acquisition Decision Memorandum  
APB - Acquisition Program Baseline  
APPN - Appropriation  
APUC - Average Procurement Unit Cost  
\$B - Billions of Dollars  
BA - Budget Authority/Budget Activity  
Blk - Block  
BY - Base Year  
CAPE - Cost Assessment and Program Evaluation  
CARD - Cost Analysis Requirements Description  
CDD - Capability Development Document  
CLIN - Contract Line Item Number  
CPD - Capability Production Document  
CY - Calendar Year  
DAB - Defense Acquisition Board  
DAE - Defense Acquisition Executive  
DAMIR - Defense Acquisition Management Information Retrieval  
DoD - Department of Defense  
DSN - Defense Switched Network  
EMD - Engineering and Manufacturing Development  
EVM - Earned Value Management  
FOC - Full Operational Capability  
FMS - Foreign Military Sales  
FRP - Full Rate Production  
FY - Fiscal Year  
FYDP - Future Years Defense Program  
ICE - Independent Cost Estimate  
IOC - Initial Operational Capability  
Inc - Increment  
JROC - Joint Requirements Oversight Council  
\$K - Thousands of Dollars  
KPP - Key Performance Parameter  
LRIP - Low Rate Initial Production  
\$M - Millions of Dollars  
MDA - Milestone Decision Authority  
MDAP - Major Defense Acquisition Program  
MILCON - Military Construction  
N/A - Not Applicable  
O&M - Operations and Maintenance  
ORD - Operational Requirements Document  
OSD - Office of the Secretary of Defense  
O&S - Operating and Support  
PAUC - Program Acquisition Unit Cost

PB - President's Budget  
PE - Program Element  
PEO - Program Executive Officer  
PM - Program Manager  
POE - Program Office Estimate  
RDT&E - Research, Development, Test, and Evaluation  
SAR - Selected Acquisition Report  
SCP - Service Cost Position  
TBD - To Be Determined  
TY - Then Year  
UCR - Unit Cost Reporting  
U.S. - United States  
USD(AT&L) - Under Secretary of Defense (Acquisition, Technology and Logistics)

## Program Information

**Program Name**

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

**DoD Component**

Air Force

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**Date Assigned:** February 4, 2015

## References

**SAR Baseline (Production Estimate)**

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

**Approved APB**

Air Force Acquisition Executive (AFAE) Approved Acquisition Program Baseline (APB) dated October 20, 2015

## Mission and Description

The Airborne Warning and Control System (AWACS) provides a highly mobile, flexible, survivable theater Battle Management (BM), Wide Area Surveillance, 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 program is the largest modification in U.S. 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 program includes an upgrade to Electronic Support Measures sensor data processing; Multi-Source Integration; a Data Link Infrastructure 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 data; enhanced mission and console recording capabilities; and an update to a low-bandwidth internet chat capability (Secure Iridium Chat).

## Executive Summary

The AWACS Block 40/45 Upgrade program remains funded for a fleet size of 24. In the FY 2016 PB, the Air Force re-phased the E-3 force reduction of seven aircraft to FY 2019. The AWACS Block 40/45 Upgrade program is already positioned in accordance with the planned FY 2019 divestiture; therefore, the program will continue to execute to a baseline of 24 aircraft.

Since submission of the June 2015 SAR, the program office completed the SCP, signed by the Assistant Secretary of the Air Force for Financial Management and Comptroller (SAF/FM) on July 31, 2015. An APB amendment was signed by the Air Force Acquisition Executive on October 20, 2015.

The AWACS Block 40/45 Upgrade program continues to meet all KPPs. During CY 2015, AWACS Block 40/45 installation and deliveries remained on schedule despite several aircraft having experienced delays due to maintenance issues unrelated to Block 40/45 installation. As of December 31, 2015, ten modified aircraft have been delivered.

In FY 2017, we intend to procure the last Commercial Off The Shelf (COTS) necessary to install 40/45 on four aircraft and refresh the six LRIP aircraft to the final configuration. The FY 2017 PB position/FYDP funding profile does not include funding to purchase COTS for any of the seven aircraft the Air Force intends to retire. If these seven aircraft are subsequently retained and modified, significant Non-Recurring Engineering may be necessary to address any COTS no longer available.

There are no significant software-related issues at this time. However, the program office is engaged with Boeing on how to control the cost of emerging cyber security requirements and the integration of urgent operational needs for internet connectivity into 40/45 hardware/software baseline.

## Threshold Breaches

### APB Breaches

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

### Nunn-McCurdy Breaches

<b>Current UCR Baseline</b>		
	PAUC	None
	APUC	None
<b>Original UCR Baseline</b>		
	PAUC	None
	APUC	None

### Schedule



Schedule Events				
Events	SAR Baseline Production Estimate	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 (IOT&E)	Jun 2012	Jun 2012	Jun 2012	Jun 2012
Full Rate Production Decision	Dec 2012	Dec 2012	Dec 2012	Dec 2012
IOC RAA	Apr 2014	Jan 2014	Jan 2014	Jan 2014
FOC RAA	Aug 2020	Aug 2020	Feb 2021	Aug 2020

#### Change Explanations

None

#### Notes

Current estimate dates are based on FY 2017 PB and 24 aircraft fleet size. IOC RAA was declared by the PM on January 7, 2014 and Air Combat Command declared IOC on July 28, 2014.

#### Acronyms and Abbreviations

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

## Performance

Performance Characteristics				
SAR Baseline Production Estimate	Current APB Production Objective/Threshold	Demonstrated Performance	Current Estimate	
<b>Multi-Source Integration</b>				
(Objective = Threshold) 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	All target data shall be correlated, fused, and integrated into a single track	The Beyond LRIP report confirms the system meets required threshold performance.	The Beyond LRIP report confirms the system meets required threshold performance.
<b>Net Ready</b>				
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 the DAA. 5) Operationally-effective information exchanges and mission critical performance specified in the applicable joint and system integrated architecture views.	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 the DAA. 5) Operationally-effective information exchanges and mission critical performance specified in the applicable joint and system integrated architecture views.	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 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.	Per Joint Interoperability Test Command letter dated October 25, 2012, "The AWACS Block 40/45 Upgrade, V10.1.20i meets the joint critical interoperability requirements in the Joint Staff-certified AWACS Block 40/45 Upgrade Program ISP, 17 October 2011". Air Force C2 Platform Information Technology DAA issued an IATO on January 11, 2012. Subsequent IATOs and ATOs have been introduced for each software version afterwards.	Each version/release of Block 40/45 continues to be approved for use by an IATO or ATO.

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

**Requirements Reference**

ORD (Combat Air Forces 010-02-I/II) dated June 16, 2009 (in lieu of CPD)

**Change Explanations**

None

**Acronyms and Abbreviations**

AEW&C - Airborne Early Warning and Control  
ATO - Approval to Operate  
DAA - Designated Approving Authority  
DISR - Department of Defense Information Technology Standards Registry  
DOT&E - Director of Operational Test & Evaluation  
GIG - Global Information Grid  
IA - Information Assurance  
IATO - Interim Approval to Operate  
ISP - Information Support Plan  
IT - Information Technology  
KIP - Key Interface Profile  
TV-1 - Technical View 1

## Track to Budget

### RDT&E

Appn	BA	PE
Air Force	3600 07	0207417F
	<b>Project</b>	<b>Name</b>
	67411L	AWACS (Shared)

### Procurement

Appn	BA	PE
Air Force	3010 06	0207417F
	<b>Line Item</b>	<b>Name</b>
	000999	Initial Spares (Shared)
Air Force	3010 05	0207417F
	<b>Line Item</b>	<b>Name</b>
	E00300	E-3 (Shared)
	E34045	Airborne Warning and Control Systems

### Notes

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

Funding for this modification is located in two P-1 Line Item Numbers. AWACS Block 40/45 funding had previously been contained in Weapon System Code (WSC) E00300, but as part of the Major Programs Transparency Initiative and starting in FY 2015, the AWACS Block 40/45 Upgrade was moved to WSC E34045. Prior year funding remains in WSC E00300.

## Cost and Funding

### Cost Summary

Total Acquisition Cost							
Appropriation	BY 2012 \$M			BY 2012 \$M	TY \$M		
	SAR Baseline Production Estimate	Current APB Production Objective/Threshold		Current Estimate	SAR Baseline Production Estimate	Current APB Production Objective	Current Estimate
RDT&E	1319.0	1272.6	1415.8	1273.2	1192.2	1145.9	1145.9
Procurement	1503.4	1389.8	1527.4	1382.0	1615.4	1496.5	1479.0
Flyaway	--	--	--	1344.8	--	--	1439.0
Recurring	--	--	--	934.7	--	--	997.3
Non Recurring	--	--	--	410.1	--	--	441.7
Support	--	--	--	37.2	--	--	40.0
Other Support	--	--	--	0.0	--	--	0.0
Initial Spares	--	--	--	37.2	--	--	40.0
MILCON	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
Total	2822.4	2662.4	N/A	2655.2	2807.6	2642.4	2624.9

#### Current APB Cost Estimate Reference

AWACS Block 40/45 FRP SCP Update dated July 28, 2015

#### Confidence Level

Confidence Level of cost estimate for current APB: 53%

The Life-Cycle Cost Estimate (LCCE) confidence level of 53% 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.

Total Quantity			
Quantity	SAR Baseline Production Estimate	Current APB Production	Current Estimate
RDT&E	0	0	0
Procurement	31	24	24
Total	31	24	24

**Quantity Notes**

Throughout the Cost and Funding section, the quantity of 24 reflects kit procurement and not kit installations. To date, the program has procured and delivered 16 kits, 10 of which have been installed on aircraft.

## Cost and Funding

### Funding Summary

Appropriation Summary									
FY 2017 President's Budget / December 2015 SAR (TY\$ M)									
Appropriation	Prior	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	To Complete	Total
RDT&E	1145.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1145.9
Procurement	866.9	183.6	227.9	106.6	61.4	32.6	0.0	0.0	1479.0
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 2017 Total	2012.8	183.6	227.9	106.6	61.4	32.6	0.0	0.0	2624.9
PB 2016 Total	2018.3	188.8	230.9	106.8	61.5	47.8	0.0	0.0	2654.1
Delta	-5.5	-5.2	-3.0	-0.2	-0.1	-15.2	0.0	0.0	-29.2

Quantity Summary										
FY 2017 President's Budget / December 2015 SAR (TY\$ M)										
Quantity	Undistributed	Prior	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	To Complete	Total
Development	0	0	0	0	0	0	0	0	0	0
Production	0	18	2	4	0	0	0	0	0	24
PB 2017 Total	0	18	2	4	0	0	0	0	0	24
PB 2016 Total	0	18	2	4	0	0	0	0	0	24
Delta	0	0	0	0	0	0	0	0	0	0

## Cost and Funding

### Annual Funding By Appropriation

Annual Funding							
3600   RDT&E   Research, Development, Test, and Evaluation, Air Force							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
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	--	--	--	--	--	--	85.1
2012	--	--	--	--	--	--	5.8
2013	--	--	--	--	--	--	3.1
2014	--	--	--	--	--	--	11.3
Subtotal	--	--	--	--	--	--	1145.9

Annual Funding							
3600   RDT&E   Research, Development, Test, and Evaluation, Air Force							
Fiscal Year	Quantity	BY 2012 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1999	--	--	--	--	--	--	1.1
2000	--	--	--	--	--	--	17.6
2001	--	--	--	--	--	--	12.4
2002	--	--	--	--	--	--	21.6
2003	--	--	--	--	--	--	138.7
2004	--	--	--	--	--	--	225.0
2005	--	--	--	--	--	--	276.9
2006	--	--	--	--	--	--	117.3
2007	--	--	--	--	--	--	137.5
2008	--	--	--	--	--	--	95.6
2009	--	--	--	--	--	--	72.7
2010	--	--	--	--	--	--	51.4
2011	--	--	--	--	--	--	85.8
2012	--	--	--	--	--	--	5.7
2013	--	--	--	--	--	--	3.0
2014	--	--	--	--	--	--	10.9
Subtotal	--	--	--	--	--	--	1273.2

Annual Funding								
3010   Procurement   Aircraft Procurement, Air Force								
Fiscal Year	Quantity	TY \$M						
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program	
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	3	113.0	20.7	28.8	162.5	2.8	165.3	
2012	5	106.8	7.7	3.8	118.3	3.6	121.9	
2013	--	--	66.0	71.4	137.4	5.4	142.8	
2014	2	60.7	6.0	42.1	108.8	2.3	111.1	
2015	5	100.2	38.5	52.6	191.3	3.0	194.3	
2016	2	64.7	7.5	106.1	178.3	5.3	183.6	
2017	4	114.4	58.3	50.7	223.4	4.5	227.9	
2018	--	59.3	6.6	37.5	103.4	3.2	106.6	
2019	--	31.4	6.2	20.6	58.2	3.2	61.4	
2020	--	23.5	5.6	0.2	29.3	3.3	32.6	
Subtotal	24	752.2	245.1	441.7	1439.0	40.0	1479.0	

Annual Funding								
3010   Procurement   Aircraft Procurement, Air Force								
Fiscal Year	Quantity	BY 2012 \$M						
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program	
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	45.9	6.5	12.2	64.6	0.5	65.1	
2011	3	111.7	20.5	28.4	160.6	2.8	163.4	
2012	5	104.0	7.5	3.7	115.2	3.5	118.7	
2013	--	--	63.0	68.1	131.1	5.2	136.3	
2014	2	57.1	5.6	39.7	102.4	2.2	104.6	
2015	5	93.1	35.8	48.8	177.7	2.8	180.5	
2016	2	59.0	6.8	96.8	162.6	4.8	167.4	
2017	4	102.3	52.2	45.4	199.9	4.0	203.9	
2018	--	52.0	5.8	32.9	90.7	2.8	93.5	
2019	--	27.0	5.3	17.7	50.0	2.8	52.8	
2020	--	19.8	4.7	0.2	24.7	2.8	27.5	
Subtotal	24	705.2	229.5	410.1	1344.8	37.2	1382.0	

Cost Quantity Information		
3010   Procurement   Aircraft Procurement, Air Force		
Fiscal Year	Quantity	End Item Recurring Flyaway (Aligned With Quantity) BY 2012 \$M
2008	--	--
2009	1	33.3
2010	2	45.9
2011	3	111.4
2012	5	103.0
2013	--	--
2014	2	62.4
2015	5	110.0
2016	2	103.3
2017	4	135.9
2018	--	--
2019	--	--
2020	--	--
Subtotal	24	705.2

## Low Rate Initial Production

Item	Initial LRIP Decision	Current Total LRIP
<b>Approval Date</b>	11/24/2008	11/24/2008
<b>Approved Quantity</b>	6	6
<b>Reference</b>	Milestone C ADM	Milestone C ADM
<b>Start Year</b>	2009	2009
<b>End Year</b>	2014	2015

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 IOC declaration. The program office requested an LRIP quantity of six to utilize the first modified aircraft as a risk reduction asset to streamline the process of combining a major upgrade with Programmed Depot Maintenance. In addition, the first aircraft was required to support production qualification testing.

The Start Year indicated specifies the year that the LRIP contract (Delivery Order 23) was awarded. The program procured one 40/45 shipset in FY 2009, two 40/45 shipsets in FY 2010 and three 40/45 shipsets in FY 2011. The Current End Year indicated above specifies the completion of the contract Period of Performance (PoP).

The PoP was extended to July 2015 to complete the provisioning effort.

## **Foreign Military Sales**

None

## **Nuclear Costs**

None

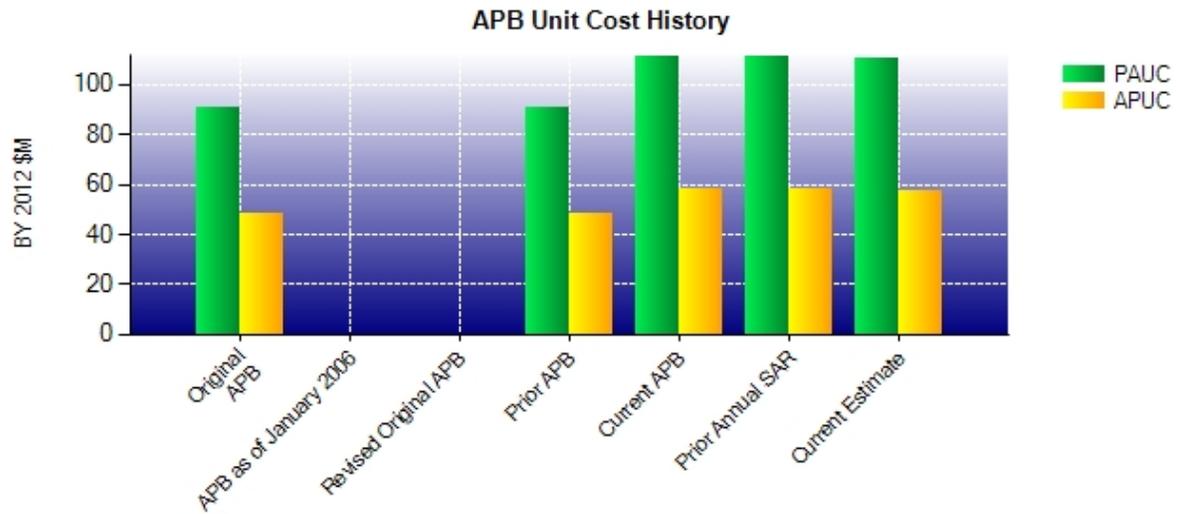
## Unit Cost

### Unit Cost Report

Item	BY 2012 \$M	BY 2012 \$M	% Change
	Current UCR Baseline (Oct 2015 APB)	Current Estimate (Dec 2015 SAR)	
<b>Program Acquisition Unit Cost</b>			
Cost	2662.4	2655.2	
Quantity	24	24	
Unit Cost	110.933	110.633	-0.27
<b>Average Procurement Unit Cost</b>			
Cost	1389.8	1382.0	
Quantity	24	24	
Unit Cost	57.908	57.583	-0.56

Item	BY 2012 \$M	BY 2012 \$M	% Change
	Original UCR Baseline (May 2013 APB)	Current Estimate (Dec 2015 SAR)	
<b>Program Acquisition Unit Cost</b>			
Cost	2822.4	2655.2	
Quantity	31	24	
Unit Cost	91.045	110.633	+21.51
<b>Average Procurement Unit Cost</b>			
Cost	1503.4	1382.0	
Quantity	31	24	
Unit Cost	48.497	57.583	+18.74

**Unit Cost History**



Item	Date	BY 2012 \$M		TY \$M	
		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	May 2013	91.045	48.497	90.568	52.110
Current APB	Oct 2015	110.933	57.908	110.100	62.354
Prior Annual SAR	Dec 2014	111.383	57.821	110.588	62.217
Current Estimate	Dec 2015	110.633	57.583	109.371	61.625

**SAR Unit Cost History**

Current SAR Baseline to Current Estimate (TY \$M)									
Initial PAUC Production Estimate	Changes								PAUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
90.568	-0.308	15.623	-0.912	0.000	4.562	0.000	-0.162	18.803	109.371

Current SAR Baseline to Current Estimate (TY \$M)									
Initial APUC Production Estimate	Changes								APUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
52.110	-0.317	4.407	-0.217	0.000	5.804	0.000	-0.162	9.515	61.625

SAR Baseline History				
Item	SAR Planning Estimate	SAR Development Estimate	SAR Production Estimate	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	Jan 2014
Total Cost (TY \$M)	N/A	N/A	2807.6	2624.9
Total Quantity	N/A	N/A	31	24
PAUC	N/A	N/A	90.568	109.371

## Cost Variance

Summary TY \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Production Estimate)	1192.2	1615.4	--	2807.6
Previous Changes				
Economic	+0.9	+0.5	--	+1.4
Quantity	--	-259.0	--	-259.0
Schedule	-16.7	-5.2	--	-21.9
Engineering	--	--	--	--
Estimating	-15.5	+145.3	--	+129.8
Other	--	--	--	--
Support	--	-3.8	--	-3.8
Subtotal	-31.3	-122.2	--	-153.5
Current Changes				
Economic	-0.7	-8.1	--	-8.8
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-14.3	-6.0	--	-20.3
Other	--	--	--	--
Support	--	-0.1	--	-0.1
Subtotal	-15.0	-14.2	--	-29.2
Adjustments	--	--	--	--
Total Changes	-46.3	-136.4	--	-182.7
CE - Cost Variance	1145.9	1479.0	--	2624.9
CE - Cost & Funding	1145.9	1479.0	--	2624.9

Summary BY 2012 \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Production Estimate)	1319.0	1503.4	--	2822.4
Previous Changes				
Economic	--	--	--	--
Quantity	--	-227.1	--	-227.1
Schedule	-17.9	-6.4	--	-24.3
Engineering	--	--	--	--
Estimating	-15.6	+122.2	--	+106.6
Other	--	--	--	--
Support	--	-4.4	--	-4.4
Subtotal	-33.5	-115.7	--	-149.2
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-12.3	-5.7	--	-18.0
Other	--	--	--	--
Support	--	--	--	--
Subtotal	-12.3	-5.7	--	-18.0
Adjustments	--	--	--	--
Total Changes	-45.8	-121.4	--	-167.2
CE - Cost Variance	1273.2	1382.0	--	2655.2
CE - Cost & Funding	1273.2	1382.0	--	2655.2

Previous Estimate: June 2015

RDT&E	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-0.7
Adjustment for current and prior escalation. (Estimating)	+0.6	+0.6
Realignment of funds from AWACS Blk 40/45 to support Combat Identification program. (Estimating)	-12.9	-14.9
<b>RDT&amp;E Subtotal</b>	<b>-12.3</b>	<b>-15.0</b>

Procurement	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-8.1
Adjustment for current and prior escalation. (Estimating)	+4.1	+4.2
Realignment of funding from AWACS Blk 40/45 to source the Next-Generation Identification Friend or Foe and Training Support Infrastructure requirements. (Estimating)	-9.8	-10.2
Adjustment for current and prior escalation. (Support)	+0.1	+0.2
Decrease in Initial Spares. (Support)	-0.1	-0.3
<b>Procurement Subtotal</b>	<b>-5.7</b>	<b>-14.2</b>

## Contracts

### Contract Identification

**Appropriation:** Procurement  
**Contract Name:** AWACS 40/45 Upgrade Program Full Rate Production  
**Contractor:** The Boeing Company  
**Contractor Location:** P.O. Box 3707  
 Seattle, WA 98124-2207  
**Contract Number:** F19628-01-D-0016/26  
**Contract Type:** Fixed Price Incentive(Firm Target) (FPIF)  
**Award Date:** December 27, 2012  
**Definitization Date:** December 27, 2012

### Contract Price

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
137.3	142.5	N/A	205.3	249.1	N/A	182.1	175.7

### Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the award of Next Generation Identification Friend or Foe Integration and FRP Shipsets #12 and 13.

### Contract Variance

Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (1/28/2016)	+10.8	-3.2
Previous Cumulative Variances	+1.7	-7.7
Net Change	+9.1	+4.5

### Cost and Schedule Variance Explanations

The favorable net change in the cost variance is due to improvements in cost performance of CLINs 3606, 3610, and 3613. The government-contractor team has been effective in controlling Shipset costs over the period July 2015 to December 2015.

The favorable net change in the schedule variance is due to strong recovery in the schedule variances for CLINs 3606 and 3613, over the period July 2015 to January 2016.

**Notes**

Earned Value Management Data is received only for specific CLINs listed below representing \$178.2M, 61% of the total contract value.

CLIN 3300 Engineering Support to Diminishing Manufacturing Sources Upgrade

CLIN 3606 FRP #1 Shipsets for aircraft P7 - P11

CLIN 3608 Life of Type Buy

CLIN 3613 FRP Shipsets # P12 and P13

CLIN 3302 Next Generation Identification Friend or Foe Integration

CLIN 3610 FRP Shipsets for aircraft P14 - P18

## Deliveries and Expenditures

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	0	0	0	--
Production	10	10	24	41.67%
Total Program Quantity Delivered	10	10	24	41.67%

Expended and Appropriated (TY \$M)			
Total Acquisition Cost	2624.9	Years Appropriated	18
Expended to Date	1523.7	Percent Years Appropriated	81.82%
Percent Expended	58.05%	Appropriated to Date	2196.4
Total Funding Years	22	Percent Appropriated	83.68%

The above data is current as of February 09, 2016.

## Operating and Support Cost

### Cost Estimate Details

<b>Date of Estimate:</b>	July 31, 2015
<b>Source of Estimate:</b>	SCP
<b>Quantity to Sustain:</b>	24
<b>Unit of Measure:</b>	Aircraft
<b>Service Life per Unit:</b>	25.00 Years
<b>Fiscal Years in Service:</b>	FY 2011 - FY 2035

O&S cost estimate reflects revised SCP dated July 31, 2015.

### Sustainment Strategy

- Production will leave the AWACS fleet with two 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 FY 2019 through life of program
- O&S COTS procured with AF O&M funding
- O&S COTS installed by Air Logistics Complex (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
- Product Support Business Case Analysis (PSBCA) initiated in November 2015

### Antecedent Information

AWACS Block 30/35 O&S cost is based on historical Block 30/35 O&S cost projected through FY 2035. These costs are used for comparison to Block 40/45 O&S costs. This comparison assumes Block 30/35 can be maintained through FY 2035 and assumes no major DMS issues (Status Quo). Block 30/35 cost was obtained from the Air Force Total Ownership Cost (AFTOC) database for a period of FY 2007-2011. The data was normalized to BY2012 and projected out through FY 2035.

Annual O&S Costs BY2012 \$M		
Cost Element	AWACS Blk 40/45 Upgrade Average Annual Cost Per Aircraft	AWACS Blk 30/35 (Antecedent) Average Annual Cost Per Aircraft
Unit-Level Manpower	0.000	11.733
Unit Operations	0.000	6.162
Maintenance	0.520	8.318
Sustaining Support	0.299	1.203
Continuing System Improvements	0.098	0.737
Indirect Support	0.000	3.583
Other	0.000	0.000
<b>Total</b>	<b>0.917</b>	<b>31.736</b>

AWACS Block 40/45 Upgrade program Yearly Average per Aircraft costs represent the additional funding required per aircraft when compared to the antecedent AWACS Block 30/35 yearly average per Aircraft O&S costs. Thus, these costs are due solely to the AWACS Block 40/45 Upgrade.

Item	Total O&S Cost \$M			
	AWACS Blk 40/45 Upgrade		AWACS Blk 30/35 (Antecedent)	
	Current Production APB Objective/Threshold	Current Estimate		
<b>Base Year</b>	550.0	605.0	550.0	19041.1
<b>Then Year</b>	731.3	N/A	731.0	N/A

The AWACS Block 40/45 Upgrade program 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.

**Equation to Translate Annual Cost to Total Cost**

Average annual cost per AWACS aircraft (24) (entire fleet) is calculated by taking the total AWACS 40/45 system cost (\$550.0M) and dividing by the life of the platform (FY 2011-2035, 25 years) and then dividing by the total quantity of aircraft (24).  $\$550.0M / 25 / 24 = \$0.917M$ .

O&S Cost Variance		
Category	BY 2012 \$M	Change Explanations
Prior SAR Total O&S Estimates - Jun 2015 SAR	1020.8	
Programmatic/Planning Factors	0.0	
Cost Estimating Methodology	-470.8	Cost model revised and new basis from AFTOC updated from 2012 to 2015 data
Cost Data Update	0.0	
Labor Rate	0.0	
Energy Rate	0.0	
Technical Input	0.0	

Other	0.0
Total Changes	-470.8
Current Estimate	550.0

**Disposal Estimate Details**

**Date of Estimate:**

**Source of Estimate:**

**Disposal/Demilitarization Total Cost (BY 2012 \$M):**

There are no disposal costs associated specifically with the AWACS Block 40/45 Upgrade.