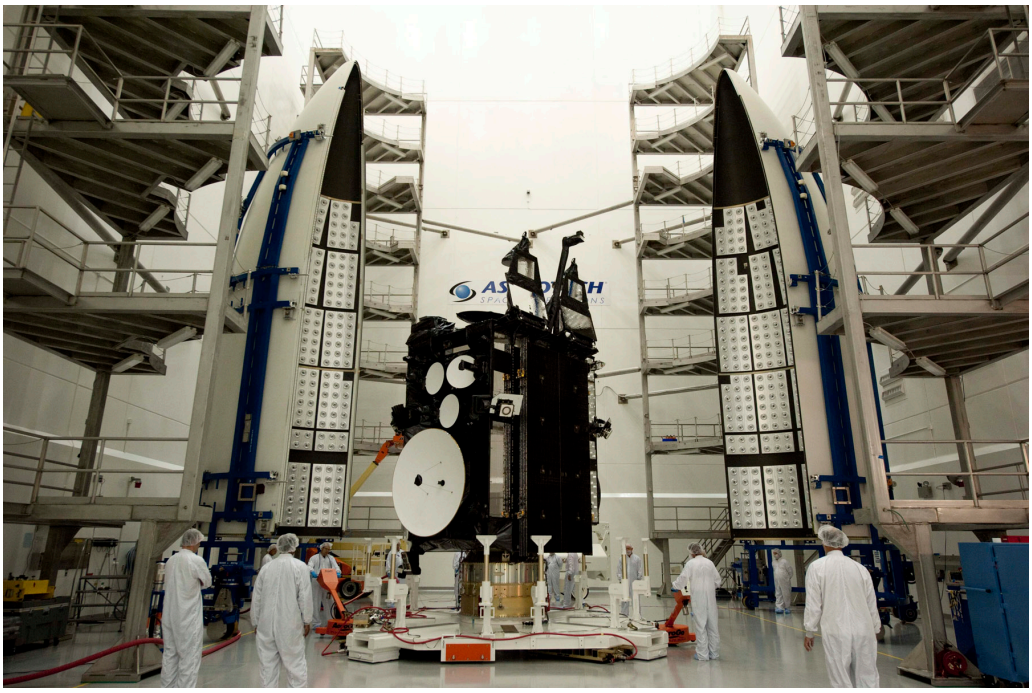
Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-261



Advanced Extremely High Frequency Satellite (AEHF)

As of December 31, 2012

Defense Acquisition Management
Information Retrieval
(DAMIR)

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Program Information

Program Name

Advanced Extremely High Frequency Satellite (AEHF)

DoD Component

Air Force

Joint Participants

Canada; The Netherlands; United Kingdom

Responsible Office

Responsible Office

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Date Assigned July 19, 2010

References

AEHF SV 1-4

SAR Baseline (Production Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated March 3, 2005

Approved APB

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated June 16, 2011

AEHF SV 5-6

SAR Baseline (Production Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated October 23, 2012

Approved APB

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated October 23, 2012

Mission and Description

Advanced Extremely High Frequency (AEHF) is a joint service satellite communications system that provides global, survivable, secure, protected, and jam-resistant communications for high priority military ground, sea, and air assets. The system consists of four satellites in Geosynchronous Earth Orbit that provides 10 times the capacity of the 1990s-era Milstar Block II satellites. The system provides continuous 24-hour EHF Extended Data Rate coverage between 65 degrees north and 65 degrees south latitude. Advanced EHF allows the National Security Council and Combatant Commanders to control their tactical and strategic forces at all levels of conflict through general nuclear war and supports the attainment of information superiority.

The Advanced EHF operational system is composed of three segments: space (the satellites), terminal (the users), and a mission control segment. The space segment consists of a cross-linked constellation of satellites to provide worldwide coverage. The terminal segment includes fixed and mobile ground terminals, ship and submarine terminals, and airborne terminals. The mission control segment controls satellites on orbit, monitors satellite health, and provides communication system planning and monitoring. This segment is also survivable, with both fixed and mobile control stations.

International Cooperative Program – The three countries that have signed Memoranda of Understanding are as follows: Canada, November 16, 1999, The Netherlands, November 8, 2002 and the United Kingdom September 9, 2003. These bilateral agreements allocate a portion of protected communication resources in exchange for financial participation in development. The Netherlands, Canada and the United Kingdom signed a Memoranda of Understanding in preparation for entering into a Foreign Military Sales case to purchase International Partnership variants of Advanced EHF terminals.

Executive Summary

Advanced EHF had noteworthy achievements in 2012. The 14th Air Force accepted AEHF Space Vehicle 1 Satellite Control Authority on March 12, 2012. AEHF SV 2 was successfully launched from Cape Canaveral Air Force Station on May 4, 2012 and arrived on-orbit August 10, 2012. On-orbit testing was successfully completed September 24, 2012 and the 14th Air Force accepted Satellite Control Authority on November 7, 2012.

AEHF SV 3 completed post storage functional testing on December 21, 2012 and is scheduled for final installation and alignments processing through May 2013 and scheduled to launch in September 2013.

AEHF SV 4 production progressed smoothly with the bus 52% complete and the payload 54% complete. Two of the mission success incentive milestones were completed ahead of schedule in December 2012. The launch availability for AEHF SV 4 is 2017.

AEHF SV 5-6 production acquisition progressed well. The Milestone Decision Authority approved the AEHF SV 5-6 Acquisition Program Baseline on October 23, 2012, which designated SV 5-6 as a subprogram. The Air Force awarded a Fixed Price Incentive Firm contract to Lockheed Martin through an Undefinitized Contractual Action with a $2.199B not-to-exceed value on December 28, 2012. Contract negotiations are in process.

Developing and fielding the Advanced EHF Mission Control System software was challenging due to disconnects between the delivered system and operational suitability needs. A large number of deficiencies caused delays for Increment 5 software Operational Acceptance and achieving Initial Operational Capability and drove a six month schedule slip (from December 2014 to June 2015). The Advanced EHF community led by Headquarters Air Force Space Command are finalizing required capabilities that incorporate suitability needs. Two independent tiger teams were established to assess software development processes, determine root cause of issues experienced with the Increment 5 software release, and make recommendations to reduce risk on future releases. A majority of these recommendations were implemented into future software releases and additional quality and process metrics were incorporated to track development progress. Transition to Increment 5 software and the Extended Data Rate capability it provides is on-going. The operational utility evaluation for Increment 5 software began in September 2012 and integrated test and evaluation was successfully completed in November 2012. Dedicated testing began on February 19, 2013 and should result in acceptance by late Summer 2013. Increment 7 software development is ongoing and will provide mission planning capability for Advanced EHF's International Partners (The Netherlands, Canada and United Kingdom). The program office is finalizing Increment 7 software content to address United States Strategic Command, 14th Air Force, and 50th Space Wing suitability needs.

Threshold Breaches

AEHF SV 1-4

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

Explanation of Breach

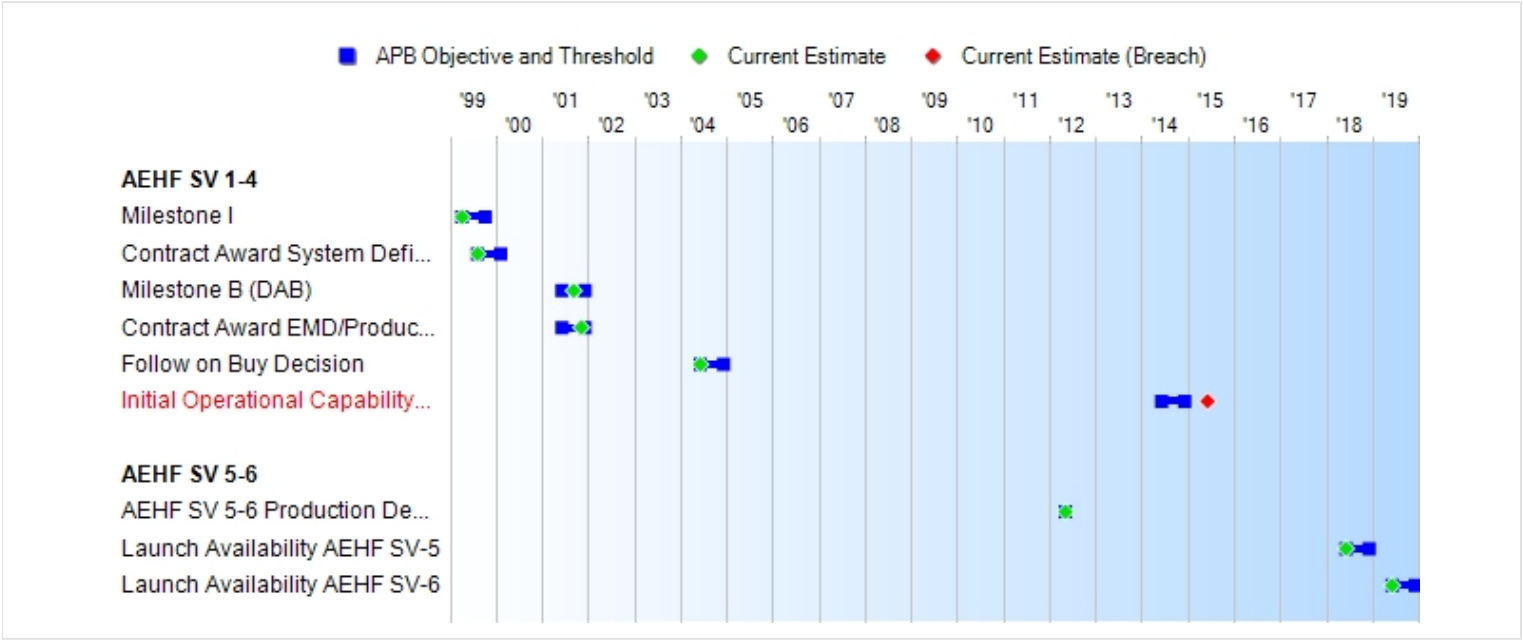
The schedule breach was due to software development delays in the Mission Control Segment's software. The program office estimates a six-month delay to Initial Operational Capability against the current Acquisition Program Baseline (from December 2014 to June 2015). A Program Deviation Report (PDR) was submitted by the program office on April 8, 2013.

AEHF SV 5-6

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



AEHF SV 1-4					
Milestones	**SAR Baseline Prod Est**	**Current APB Production Objective/Threshold**		**Current Estimate**	
Milestone I	APR 1999	APR 1999	OCT 1999	APR 1999	
Contract Award System Definition	AUG 1999	AUG 1999	FEB 2000	AUG 1999	
Milestone B (DAB)	JUN 2001	JUN 2001	DEC 2001	SEP 2001	
Contract Award EMD/Production	JUN 2001	JUN 2001	DEC 2001	NOV 2001	
Follow on Buy Decision	JUN 2004	JUN 2004	DEC 2004	JUN 2004	
Initial Operational Capability (IOC)	JUN 2010	JUN 2014	DEC 2014	**JUN 2015** [1]	(Ch-1)

[1] *APB Breach*

Acronyms And Abbreviations

DAB - Defense Acquisition Board
EMD - Engineering and Manufacturing Development

Change Explanations

(Ch-1) Current Estimate for IOC updated from December 2014 to June 2015 due to Mission Control Segment's software delays.

Memo

The IOC milestone is defined in the AEHF Operational Requirements Document dated October 2000 and addresses the capability at the time satellite two is operational. It also includes missions supported, networks active and two separate satellites operating in the AEHF mode. The operational control segment consists of one fixed and one transportable control element and an interim fully operational communications management system.

The AEHF Increment 7.5 software is required to enter Multi-service Operational Test and Evaluation and must meet the AEHF SV 1-4 conditions for a successful IOC date of June 2015.

AEHF SV 5-6				
Milestones	**SAR Baseline Prod Est**	**Current APB Production Objective/Threshold**		**Current Estimate**
AEHF SV 5-6 Production Decision	MAY 2012	MAY 2012	MAY 2012	MAY 2012
Launch Availability AEHF SV-5	JUN 2018	JUN 2018	DEC 2018	JUN 2018
Launch Availability AEHF SV-6	JUN 2019	JUN 2019	DEC 2019	JUN 2019

Change Explanations

None

Memo

Launch availability is defined as all factory work completed and satellite readied for shipment to the launch base.

Performance

AEHF SV 1-4					
Characteristics	**SAR Baseline Prod Est**	**Current APB Production Objective/Threshold**		**Demonstrated Performance**	**Current Estimate**
Capacity	1.2 Gbps CMTW, 600 Mbps Strategic	1.2 Gbps CMTW, 600 Mbps Strategic	Support at least 500 Mbps for CMTW Scenario and at least 350 Mbps for Strategic Scenario	TBD	1.2 Gbps CMTW, 600 Mbps Strategic
Nuclear Protection	Provide assured communicat-ions to survivable nuclear forces exposed to the environment specified in NCGS-89-06, and for those critical networks that support the following critical functions: situation monitoring, decision making, force direc-tion, force manage-ment, and planning	Provide assured communicat-ions to survivable nuclear forces exposed to the environment specified in NCGS-89-06, and for those critical networks that support the following critical functions: situation monitoring, decision making, force direc tion, force manage-ment, and planning	Provide assured communicat-ions to survivable nuclear forces exposed to the environment specified in NCGS-89-06, and for those critical networks that support the following critical functions: situation monitoring, decision making, force direc tion, force manage-ment, and planning	TBD	Provide assured communicat-ions to survivable nuclear forces exposed to the environment specified in NCGS-89-06, and for those critical networks that support the following critical functions: situation monitoring, decision making, force direc tion, force manage-ment, and planning
Access and Control	Provide users ability to plan, control, & reconfigure their	Provide users ability to plan, control, & reconfigure their	Provide users ability to plan, control, & reconfigure their	TBD	Provide users ability to plan, control, & reconfigure their

	apportioned resources; critical functions such as situation monitoring, decision making, force direct-ion, force manage-ment, & planning shall not be disrupted by communicat-ions configuration changes to noncritical functions	apportioned resources; critical functions such as situation monitoring, decision making, force direc-tion, force manage-ment, & planning shall not be disrupted by communicat-ions configuration changes to noncritical functions	apportioned resources; critical functions such as situation monitoring, decision making, force direc-tion, force manage-ment, & planning shall not be disrupted by communicat-ions configuration changes to noncritical functions		apportioned resources; critical functions such as situation monitoring, decision making, force direction, force manage-ment, & planning shall not be disrupted by communicat-ions configuration changes to noncritical functions
Interoperability					
AEHF Interopera-bility	Support joint interop-erable war-fighter communicat-ions among all military branches EHF terminals	Support joint interop-erable war-fighter communicat-ions among all military branches EHF terminals	Support joint interop-erable war-fighter communicat-ions among all military branches EHF terminals	TBD	Support joint interop-erable war-fighter communicat-ions among all military branches EHF terminals
Milstar Backward Compatible	Operate with the Milstar system, at all LDR and MDR terminal supported data rates, throughout the Milstar transition to the AEHF system	Operate with the Milstar system, at all LDR and MDR terminal supported data rates, throughout the Milstar transition to the AEHF system	Operate with the Milstar system, at all LDR and MDR terminal supported data rates, throughout the Milstar transition to the AEHF system	TBD	Operate with the Milstar system, at all LDR and MDR terminal supported data rates, throughout the Milstar transition to the AEHF system

Requirements Source: Operational Requirements Document (ORD) dated October 1, 2000

Acronyms And Abbreviations

CMTW - Combined Major Theater Warfare
EHF - Extremely High Frequency
Gbps - Giga bytes per second
LDR - Low Data Rate
Mbps - Mega bytes per second
MDR - Medium Data Rate
Milstar - Military Strategic and Tactical Relay
NCGS - Nuclear Criteria Group Secretariat

Change Explanations

None

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

AEHF SV 5-6					
Characteristics	**SAR Baseline Prod Est**	**Current APB Production Objective/Threshold**		**Demonstrated Performance**	**Current Estimate**
Capacity	1.2 Gbps CMTW, 600 Mbps Strategic	1.2 Gbps CMTW, 600 Mbps Strategic	Support at least 500 Mbps for CMTW Scenario and at least 350 Mbps for Strategic Scenario	TBD	1.2 Gbps CMTW, 600 Mbps Strategic
Nuclear Protection	Provide assured communicat-ions to survivable nuclear forces exposed to the environment specified in NCGS-89-06, and for those critical networks that support the following critical functions: situation monitoring, decision making, force direc tion, force manage-ment, and planning	Provide assured communicat-ions to survivable nuclear forces exposed to the environment specified in NCGS-89-06, and for those critical networks that support the following critical functions: situation monitoring, decision making, force direc tion, force manage-ment, and planning	Provide assured communicat-ions to survivable nuclear forces exposed to the environment specified in NCGS-89-06, and for those critical networks that support the following critical functions: situation monitoring, decision making, force direc tion, force manage-ment, and planning	TBD	Provide assured communicat-ions to survivable nuclear forces exposed to the environment specified in NCGS-89-06, and for those critical networks that support the following critical functions: situation monitoring, decision making, force direc tion, force manage-ment, and planning
Access and Control	Provide users ability to plan, control, & reconfigure their apportioned resources; critical	Provide users ability to plan, control, & reconfigure their apportioned resources; critical	Provide users ability to plan, control, & reconfigure their apportioned resources; critical	TBD	Provide users ability to plan, control, & reconfigure their apportioned resources; critical

	functions such as situation monitoring, decision making, force direct-ion, force manage-ment, & planning shall not be disrupted by communicat-ions configuration changes to noncritical functions	functions such as situation monitoring, decision making, force direct-ion, force manage-ment, & planning shall not be disrupted by communicat-ions configuration changes to noncritical functions	functions such as situation monitoring, decision making, force direct-ion, force manage-ment, & planning shall not be disrupted by communicat-ions configuration changes to noncritical functions		functions such as situation monitoring, decision making, force direct-ion, force manage-ment, & planning shall not be disrupted by communicat-ions configuration changes to noncritical functions
AEHF Interoperability	Support joint interop-erable war-fighter communicat-ions among all military branches EHF terminals	Support joint interop-erable war-fighter communicat-ions among all military branches EHF terminals	Support joint interop-erable war-fighter communicat-ions among all military branches EHF terminals	TBD	Support joint interop-erable war-fighter communicat-ions among all military branches EHF terminals
Milstar Backward Compatible	Operate with the Milstar system, at all LDR and MDR terminal supported data rates, throughout the Milstar transition to the AEHF system	Operate with the Milstar system, at all LDR and MDR terminal supported data rates, throughout the Milstar transition to the AEHF system	Operate with the Milstar system, at all LDR and MDR terminal supported data rates, throughout the Milstar transition to the AEHF system	TBD	Operate with the Milstar system, at all LDR and MDR terminal supported data rates, throughout the Milstar transition to the AEHF system

Requirements Source: Operational Requirements Document (ORD) dated October 1, 2000

Acronyms And Abbreviations

CMTW - Combined Major Theater Warfare
EHF - Extremely High Frequency
Gbps - Giga bytes per second
LDR - Low Data Rate
Mbps - Mega bytes per second
MDR - Medium Data Rate
Milstar - Military Strategic and tactical Relay
NCGS - Nuclear Criteria Group Secretariat
TBD - To Be Determined

Change Explanations

None

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

Track To Budget

AEHF SV 1-4

General Memo

AEHF Space Vehicles (SV) 1-4 reflects the following:
Procurement is associated with AEHF SV 3 and 4
Research, Development, Test and Evaluation (RDT&E) is associated with AEHF SV 1 and 2, Mission Control Segment, and Interim Contractor Support.

RDT&E

APPN 3600	BA 04	PE 0603430F	(Air Force)	
	Project 644050	AEHF Military Satellite Communications (MILSATCOM) (Space)		(Sunk)
APPN 3600	BA 05	PE 0605431F	(Air Force)	
	Project 657103	AEHF MILSATCOM (Space)		

Procurement

APPN 3020	BA 05	PE 0303604F	(Air Force)	
	ICN ADV555	Advanced EHF	(Shared)	

This project also funds follow-on to include AEHF SV 7-8 which are not reported in this SAR.

AEHF SV 5-6

RDT&E

APPN 3600	BA 04	PE 0603430F	(Air Force)	
	Project 644050 FY 2011 only	AEHF MILSATCOM (Space)		(Sunk)
	Project 64A030 FY 2013 only	Evolved AEHF MILSATCOM (EAM)	(Shared)	(Sunk)
APPN 3600	BA 05	PE 0605431F	(Air Force)	
	Project 657104	Evolved AEHF MILSATCOM	(Shared)	

(EAM)

FY 2014-15 only

Projects 64A030 and 657104 also fund the Military Satellite Communications (MILSATCOM) Space Modernization Initiative. AEHF RDT&E funding is for the AEHF SV 6 KI-54D cryptographic device. Project 644050 is FY 2011 only. Project 657104 is for FY 2014 - 2015 only.

Procurement

APPN 3020	BA 05	PE 0303604F	(Air Force)
	ICN ADV555	Advanced EHF	(Shared)

Cost and Funding

Cost Summary - Total Program

Total Acquisition Cost and Quantity - Total Program

Appropriation	BY2002 $M			BY2002 $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	5282.8	6489.3	--	6726.9	5542.2	7117.8	7446.3
Procurement	3233.0	5311.1	--	4744.0	4031.7	6565.5	5944.2
Flyaway	2656.0	--	--	4744.0	3414.4	--	5944.2
Recurring	2656.0	--	--	4744.0	3414.4	--	5944.2
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	8515.8	11800.4	N/A	11470.9	9573.9	13683.3	13390.5

Cost and Funding

Cost Summary - AEHF SV 1-4

Total Acquisition Cost and Quantity - AEHF SV 1-4

	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	5223.7	6430.2	7073.2	6669.4	5468.4	7044.0	7373.0
Procurement	577.0	2655.1	2920.6	2545.7	617.3	3151.1	3039.7
Flyaway	--	--	--	2545.7	--	--	3039.7
Recurring	--	--	--	2545.7	--	--	3039.7
Non Recurring	--	--	--	0.0	--	--	0.0
Support	--	--	--	0.0	--	--	0.0
Other Support	--	--	--	0.0	--	--	0.0
Initial Spares	--	--	--	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	5800.7	9085.3	N/A	9215.1	6085.7	10195.1	10412.7

Quantity	SAR Baseline Prod Est	Current APB Production	Current Estimate
RDT&E	2	2	2
Procurement	1	2	2
Total	3	4	4

Cost Summary - AEHF SV 5-6

Total Acquisition Cost and Quantity - AEHF SV 5-6

	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	59.1	59.1	65.0	57.5	73.8	73.8	73.3
Procurement	2656.0	2656.0	2921.6	2198.3	3414.4	3414.4	2904.5
Flyaway	2656.0	--	--	2198.3	3414.4	--	2904.5
Recurring	2656.0	--	--	2198.3	3414.4	--	2904.5
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	2715.1	2715.1	N/A	2255.8	3488.2	3488.2	2977.8

Confidence Level for Current APB Cost 50% -

The Independent Cost Estimate (ICE) to support the AEHF SV 5-6 decision, like all life-cycle cost estimates previously performed by Cost Assessment and Program Evaluation (CAPE), is built upon a product-oriented work breakdown structure, based on historical actual cost information to the maximum extent possible, and, most importantly, based on conservative assumptions that are consistent with actual demonstrated contractor and Government performance for a series of acquisition programs in which the Department has been successful.

It is difficult to calculate mathematically the precise confidence levels associated with life-cycle cost estimates prepared for Major Defense Acquisition Programs. Based on the rigor in methods used in building estimates, the strong adherence to the collection and use of historical cost information, and the review of applied assumptions, we project that it is about equally likely that the estimate will prove too low or too high for execution of the program described.

AEHF SV 5-6 Block Buy was designated a major subprogram per section 2430a of title 10, United States Code, as amended by section 912 of the National Defense Authorization Act for FY 2012 (P.L. 112-81).

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

Cost and Funding

Funding Summary - Total Program

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

Appropriation	Prior	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	To Complete	Total
RDT&E	6805.4	195.1	203.4	156.1	64.6	21.7	0.0	0.0	7446.3
Procurement	3465.5	557.3	379.5	302.2	372.0	731.8	58.2	77.7	5944.2
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	10270.9	752.4	582.9	458.3	436.6	753.5	58.2	77.7	13390.5
PB 2013 Total	10255.9	732.8	607.4	526.0	471.2	792.7	58.2	30.0	13474.2
Delta	15.0	19.6	-24.5	-67.7	-34.6	-39.2	0.0	47.7	-83.7

Cost and Funding

Funding Summary - AEHF SV 1-4

Appropriation and Quantity Summary - AEHF SV 1-4
FY2014 President's Budget / December 2012 SAR (TY$ M)

Appropriation	Prior	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	To Complete	Total
RDT&E	6791.6	175.6	183.4	136.1	64.6	21.7	0.0	0.0	7373.0
Procurement	2710.0	50.2	64.5	66.6	77.5	41.8	29.1	0.0	3039.7
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	9501.6	225.8	247.9	202.7	142.1	63.5	29.1	0.0	10412.7
PB 2013 Total	10255.9	732.8	607.4	526.0	471.2	792.7	58.2	30.0	13474.2
Delta	-754.3	-507.0	-359.5	-323.3	-329.1	-729.2	-29.1	-30.0	-3061.5

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	2	0	0	0	0	0	0	0	0	2
Production	0	2	0	0	0	0	0	0	0	2
PB 2014 Total	2	2	0	0	0	0	0	0	0	4
PB 2013 Total	2	4	0	0	0	0	0	0	0	6
Delta	0	-2	0	0	0	0	0	0	0	-2

Funding Summary - AEHF SV 5-6

Appropriation and Quantity Summary - AEHF SV 5-6
FY2014 President's Budget / December 2012 SAR (TY$ M)

Appropriation	Prior	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	To Complete	Total
RDT&E	13.8	19.5	20.0	20.0	0.0	0.0	0.0	0.0	73.3
Procurement	755.5	507.1	315.0	235.6	294.5	690.0	29.1	77.7	2904.5
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	769.3	526.6	335.0	255.6	294.5	690.0	29.1	77.7	2977.8
PB 2013 Total	--	--	--	--	--	--	--	--	0.0
Delta	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2977.8

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	2	0	0	0	0	0	0	0	2
PB 2014 Total	0	2	0	0	0	0	0	0	0	2
PB 2013 Total	0	0	0	0	0	0	0	0	0	0
Delta	0	2	0	0	0	0	0	0	0	2

Cost and Funding

Annual Funding By Appropriation - AEHF SV 1-4

Annual Funding TY$ - AEHF SV 1-4
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	--	--	--	--	--	--	23.1
1996	--	--	--	--	--	--	31.0
1997	--	--	--	--	--	--	32.3
1998	--	--	--	--	--	--	34.2
1999	--	--	--	--	--	--	54.6
2000	--	--	--	--	--	--	89.8
2001	--	--	--	--	--	--	229.8
2002	--	--	--	--	--	--	494.8
2003	--	--	--	--	--	--	832.6
2004	--	--	--	--	--	--	872.7
2005	--	--	--	--	--	--	652.2
2006	--	--	--	--	--	--	647.7
2007	--	--	--	--	--	--	599.3
2008	--	--	--	--	--	--	659.1
2009	--	--	--	--	--	--	440.7
2010	--	--	--	--	--	--	456.2
2011	--	--	--	--	--	--	364.8
2012	--	--	--	--	--	--	276.7
2013	--	--	--	--	--	--	175.6
2014	--	--	--	--	--	--	183.4
2015	--	--	--	--	--	--	136.1
2016	--	--	--	--	--	--	64.6
2017	--	--	--	--	--	--	21.7
Subtotal	**2**	**--**	**--**	**--**	**--**	**--**	**7373.0**

Annual Funding BY$ - AEHF SV 1-4
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	--	--	--	--	--	--	25.0
1996	--	--	--	--	--	--	33.0
1997	--	--	--	--	--	--	33.9
1998	--	--	--	--	--	--	35.7
1999	--	--	--	--	--	--	56.4
2000	--	--	--	--	--	--	91.4
2001	--	--	--	--	--	--	230.5
2002	--	--	--	--	--	--	491.1
2003	--	--	--	--	--	--	815.2
2004	--	--	--	--	--	--	833.7
2005	--	--	--	--	--	--	607.5
2006	--	--	--	--	--	--	585.6
2007	--	--	--	--	--	--	528.0
2008	--	--	--	--	--	--	569.2
2009	--	--	--	--	--	--	375.6
2010	--	--	--	--	--	--	383.8
2011	--	--	--	--	--	--	301.0
2012	--	--	--	--	--	--	223.7
2013	--	--	--	--	--	--	138.9
2014	--	--	--	--	--	--	142.3
2015	--	--	--	--	--	--	103.7
2016	--	--	--	--	--	--	48.3
2017	--	--	--	--	--	--	15.9
Subtotal	**2**	**--**	**--**	**--**	**--**	**--**	**6669.4**

The Research, Development, Test and Evaluation (3600) Appropriation funding profile identified in this SAR differs from budget data in that it includes $270.5M in International Partners (IP) funding and does not include $119M (FY 2003 - FY 2009) for Production and Qualification (P&Q) of Radiation Hardened Components.

The yearly breakout of the funding is as follows:

IP Funds	($M)
FY 2002	35.2
FY 2003	44.0
FY 2004	91.0
FY 2005	67.0
FY 2006	28.5
FY 2007	3.0
FY 2008	1.8
Total	270.5

The yearly breakout of the P&Q of Radiation Hardened Components funding is as follows:

P&Q	($M)
FY 2003	19.0
FY 2004	19.0
FY 2005	21.0
FY 2006	20.0
FY 2007	21.0
FY 2009	19.0
Total	119.0

Annual Funding TY$ - AEHF SV 1-4
3020 | Procurement | Missile Procurement, Air Force

Fiscal Year	Quantity	End Item Recurring Flyaway TY $M	Non End Item Recurring Flyaway TY $M	Non Recurring Flyaway TY $M	Total Flyaway TY $M	Total Support TY $M	Total Program TY $M
2005	--	78.2	--	--	78.2	--	78.2
2006	1	521.9	--	--	521.9	--	521.9
2007	--	--	--	--	--	--	--
2008	--	141.4	--	--	141.4	--	141.4
2009	--	181.2	--	--	181.2	--	181.2
2010	1	1734.5	--	--	1734.5	--	1734.5
2011	--	29.7	--	--	29.7	--	29.7
2012	--	23.1	--	--	23.1	--	23.1
2013	--	50.2	--	--	50.2	--	50.2
2014	--	64.5	--	--	64.5	--	64.5
2015	--	66.6	--	--	66.6	--	66.6
2016	--	77.5	--	--	77.5	--	77.5
2017	--	41.8	--	--	41.8	--	41.8
2018	--	29.1	--	--	29.1	--	29.1
Subtotal	**2**	**3039.7**	**--**	**--**	**3039.7**	**--**	**3039.7**

Annual Funding BY$ - AEHF SV 1-4
3020 | Procurement | Missile Procurement, 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
2005	--	72.0	--	--	72.0	--	72.0
2006	1	467.3	--	--	467.3	--	467.3
2007	--	--	--	--	--	--	--
2008	--	121.3	--	--	121.3	--	121.3
2009	--	153.2	--	--	153.2	--	153.2
2010	1	1444.6	--	--	1444.6	--	1444.6
2011	--	24.2	--	--	24.2	--	24.2
2012	--	18.4	--	--	18.4	--	18.4
2013	--	38.9	--	--	38.9	--	38.9
2014	--	49.0	--	--	49.0	--	49.0
2015	--	49.6	--	--	49.6	--	49.6
2016	--	56.7	--	--	56.7	--	56.7
2017	--	30.0	--	--	30.0	--	30.0
2018	--	20.5	--	--	20.5	--	20.5
Subtotal	**2**	**2545.7**	**--**	**--**	**2545.7**	**--**	**2545.7**

Cost Quantity Information - AEHF SV 1-4
3020 | Procurement | Missile Procurement, Air Force

Fiscal Year	Quantity	End Item Recurring Flyaway (Aligned with Quantity) BY 2002 $M
2005	--	--
2006	1	857.9
2007	--	--
2008	--	--
2009	--	--
2010	1	1687.8
2011	--	--
2012	--	--
2013	--	--
2014	--	--
2015	--	--
2016	--	--
2017	--	--
2018	--	--
Subtotal	**2**	**2545.7**

Annual Funding By Appropriation - AEHF SV 5-6

Annual Funding TY$ - AEHF SV 5-6
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
2011	--	--	--	--	--	--	13.8
2012	--	--	--	--	--	--	--
2013	--	--	--	--	--	--	19.5
2014	--	--	--	--	--	--	20.0
2015	--	--	--	--	--	--	20.0
Subtotal	**--**	**--**	**--**	**--**	**--**	**--**	**73.3**

Annual Funding BY$ - AEHF SV 5-6
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
2011	--	--	--	--	--	--	11.4
2012	--	--	--	--	--	--	--
2013	--	--	--	--	--	--	15.4
2014	--	--	--	--	--	--	15.5
2015	--	--	--	--	--	--	15.2
Subtotal	**--**	**--**	**--**	**--**	**--**	**--**	**57.5**

Annual Funding TY$ - AEHF SV 5-6
3020 | Procurement | Missile Procurement, Air Force

Fiscal Year	Quantity	End Item Recurring Flyaway TY $M	Non End Item Recurring Flyaway TY $M	Non Recurring Flyaway TY $M	Total Flyaway TY $M	Total Support TY $M	Total Program TY $M
2011	--	227.2	--	--	227.2	--	227.2
2012	2	528.3	--	--	528.3	--	528.3
2013	--	507.1	--	--	507.1	--	507.1
2014	--	315.0	--	--	315.0	--	315.0
2015	--	235.6	--	--	235.6	--	235.6
2016	--	294.5	--	--	294.5	--	294.5
2017	--	690.0	--	--	690.0	--	690.0
2018	--	29.1	--	--	29.1	--	29.1
2019	--	30.0	--	--	30.0	--	30.0
2020	--	31.7	--	--	31.7	--	31.7
2021	--	16.0	--	--	16.0	--	16.0
Subtotal	**2**	**2904.5**	**--**	**--**	**2904.5**	**--**	**2904.5**

Annual Funding BY$ - AEHF SV 5-6
3020 | Procurement | Missile Procurement, 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
2011	--	185.0	--	--	185.0	--	185.0
2012	2	421.6	--	--	421.6	--	421.6
2013	--	392.5	--	--	392.5	--	392.5
2014	--	239.3	--	--	239.3	--	239.3
2015	--	175.6	--	--	175.6	--	175.6
2016	--	215.5	--	--	215.5	--	215.5
2017	--	495.4	--	--	495.4	--	495.4
2018	--	20.5	--	--	20.5	--	20.5
2019	--	20.7	--	--	20.7	--	20.7
2020	--	21.5	--	--	21.5	--	21.5
2021	--	10.7	--	--	10.7	--	10.7
Subtotal	**2**	**2198.3**	**--**	**--**	**2198.3**	**--**	**2198.3**

Cost Quantity Information - AEHF SV 5-6
3020 | Procurement | Missile Procurement, Air Force

Fiscal Year	Quantity	End Item Recurring Flyaway (Aligned with Quantity) BY 2002 $M
2011	--	--
2012	2	2198.3
2013	--	--
2014	--	--
2015	--	--
2016	--	--
2017	--	--
2018	--	--
2019	--	--
2020	--	--
2021	--	--
Subtotal	**2**	**2198.3**

Low Rate Initial Production

AEHF SV 1-4
There is no LRIP for this program.

AEHF SV 5-6
There is no LRIP for this program.

Foreign Military Sales

AEHF SV 1-4

Country	Date of Sale	Quantity	Total Cost $M	Memo
United Kingdom	9/9/2003		84.0	
Netherlands	11/8/2002		39.8	
Canada	11/16/1999		146.2	

The AEHF program has no FMS; all sales in the table are International Partner (IP) cooperation.

The IP's access the antennas and a portion of the capacity on the AEHF satellites.

NOTE: The total IP O&S contribution is $114.3M. O&S costs are commensurate with system resource usage respectively. The specific break out by IP is as follows:

Canada: $68.2M
The Netherlands: $14.8M
United Kingdom: $31.3M

AEHF SV 5-6
None

Nuclear Cost

AEHF SV 1-4
None

AEHF SV 5-6
None

Unit Cost

AEHF SV 1-4

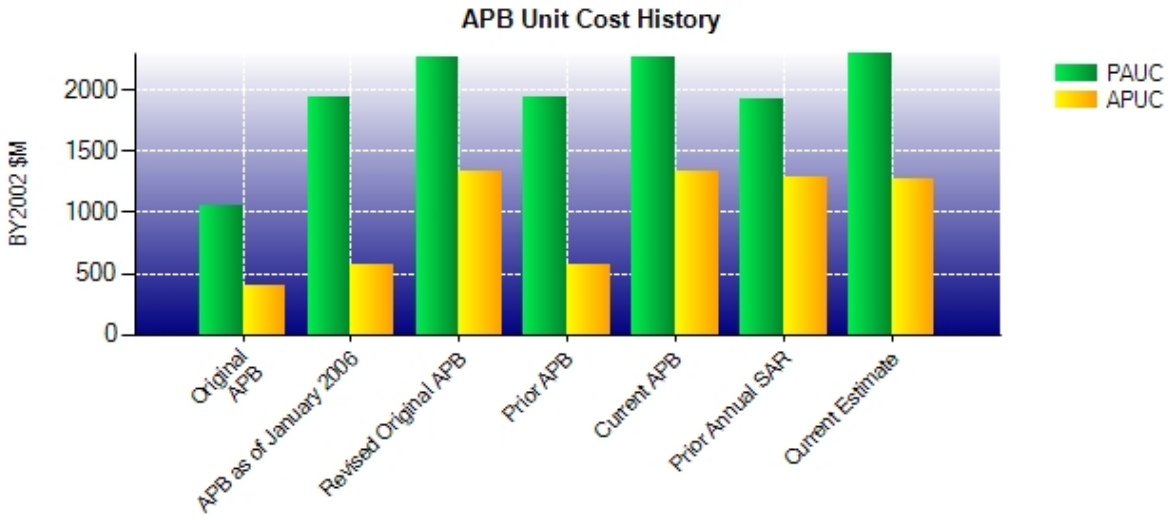
Unit Cost Report

Unit Cost	BY2002 $M Current UCR Baseline (JUN 2011 APB)	BY2002 $M Current Estimate (DEC 2012 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	9085.3	9215.1	
Quantity	4	4	
Unit Cost	2271.325	2303.775	+1.43
Average Procurement Unit Cost (APUC)			
Cost	2655.1	2545.7	
Quantity	2	2	
Unit Cost	1327.550	1272.850	-4.12

Unit Cost	BY2002 $M Revised Original UCR Baseline (JUN 2011 APB)	BY2002 $M Current Estimate (DEC 2012 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	9085.3	9215.1	
Quantity	4	4	
Unit Cost	2271.325	2303.775	+1.43
Average Procurement Unit Cost (APUC)			
Cost	2655.1	2545.7	
Quantity	2	2	
Unit Cost	1327.550	1272.850	-4.12

AEHF SV 1-4

Unit Cost History



		BY2002 $M		TY $M	
	Date	PAUC	APUC	PAUC	APUC
Original APB	OCT 2001	1055.840	401.667	1129.060	460.133
APB as of January 2006	MAR 2005	1933.567	577.000	2028.567	617.300
Revised Original APB	JUN 2011	2271.325	1327.550	2548.775	1575.550
Prior APB	MAR 2005	1933.567	577.000	2028.567	617.300
Current APB	OCT 2012	2271.325	1327.550	2548.775	1575.550
Prior Annual SAR	DEC 2011	1928.983	1280.475	2245.700	1597.650
Current Estimate	DEC 2012	2303.775	1272.850	2603.175	1519.850

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	
1129.060	-35.225	-291.584	262.425	0.000	342.633	0.000	-0.275	277.974	2028.567

Current SAR Baseline to Current Estimate (TY $M)

PAUC Prod Est	Changes								PAUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
2028.567	46.375	-270.642	316.800	22.025	460.050	0.000	0.000	574.608	2603.175

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	
460.133	-3.250	912.967	88.600	0.000	998.650	0.000	-0.550	1996.417	617.300

Current SAR Baseline to Current Estimate (TY $M)

APUC Prod Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
617.300	28.500	164.350	-30.900	0.000	740.600	0.000	0.000	902.550	1519.850

SAR Baseline History

Item/Event	SAR Planning Estimate (PE)	SAR Development Estimate (DE)	SAR Production Estimate (PdE)	Current Estimate
Milestone I	APR 1999	APR 1999	APR 1999	APR 1999
Milestone B	FEB 2001	JUN 2001	JUN 2001	SEP 2001
Milestone C	FEB 2001	JUN 2004	JUN 2004	JUN 2004
IOC	NOV 2007	JUL 2008	JUN 2010	JUN 2015
Total Cost (TY $M)	2690.6	5645.3	6085.7	10412.7
Total Quantity	2	5	3	4
Prog. Acq. Unit Cost (PAUC)	1345.300	1129.060	2028.567	2603.175

AEHF SV 5-6

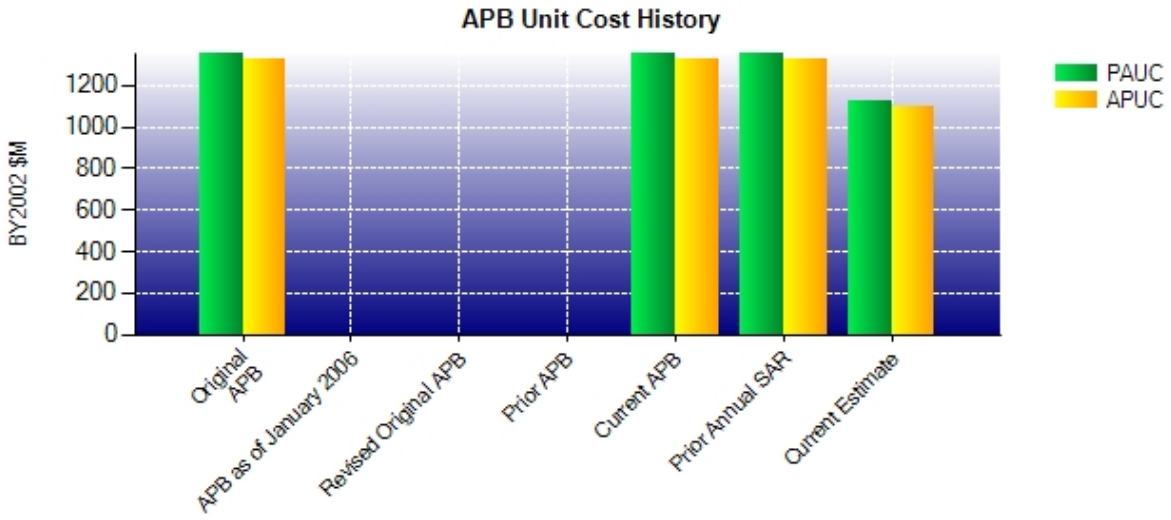
Unit Cost Report

	BY2002 $M	BY2002 $M	
Unit Cost	**Current UCR Baseline (OCT 2012 APB)**	**Current Estimate (DEC 2012 SAR)**	**BY % Change**
Program Acquisition Unit Cost (PAUC)			
Cost	2715.1	2255.8	
Quantity	2	2	
Unit Cost	1357.550	1127.900	-16.92
Average Procurement Unit Cost (APUC)			
Cost	2656.0	2198.3	
Quantity	2	2	
Unit Cost	1328.000	1099.150	-17.23

	BY2002 $M	BY2002 $M	
Unit Cost	**Original UCR Baseline (OCT 2012 APB)**	**Current Estimate (DEC 2012 SAR)**	**BY % Change**
Program Acquisition Unit Cost (PAUC)			
Cost	2715.1	2255.8	
Quantity	2	2	
Unit Cost	1357.550	1127.900	-16.92
Average Procurement Unit Cost (APUC)			
Cost	2656.0	2198.3	
Quantity	2	2	
Unit Cost	1328.000	1099.150	-17.23

AEHF SV 5-6

Unit Cost History



		BY2002 $M		TY $M	
	Date	PAUC	APUC	PAUC	APUC
Original APB	OCT 2012	1357.550	1328.000	1744.100	1707.200
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	OCT 2012	1357.550	1328.000	1744.100	1707.200
Prior Annual SAR	DEC 2011	1357.550	1328.000	1744.100	1707.200
Current Estimate	DEC 2012	1127.900	1099.150	1488.900	1452.250

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	
1744.100	53.850	0.000	0.000	0.000	-309.050	0.000	0.000	-255.200	1488.900

Current SAR Baseline to Current Estimate (TY $M)

Initial APUC Prod Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
1707.200	53.050	0.000	0.000	0.000	-308.000	0.000	0.000	-254.950	1452.250

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	N/A	N/A
Milestone C	N/A	N/A	N/A	N/A
IOC	N/A	N/A	N/A	N/A
Total Cost (TY $M)	N/A	N/A	3488.2	2977.8
Total Quantity	N/A	N/A	2	2
Prog. Acq. Unit Cost (PAUC)	N/A	N/A	1744.100	1488.900

Cost Variance

AEHF SV 1-4

Summary Then Year $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Prod Est)	5468.4	617.3	--	6085.7
Previous Changes				
Economic	+126.2	+57.1	--	+183.3
Quantity	--	+946.0	--	+946.0
Schedule	+1329.0	-61.8	--	+1267.2
Engineering	+88.1	--	--	+88.1
Estimating	-1.9	+1417.6	--	+1415.7
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+1541.4	+2358.9	--	+3900.3
Current Changes				
Economic	+2.3	-0.1	--	+2.2
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	+360.9	+63.6	--	+424.5
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+363.2	+63.5	--	+426.7
Total Changes	+1904.6	+2422.4	--	+4327.0
CE - Cost Variance	7373.0	3039.7	--	10412.7
CE - Cost & Funding	7373.0	3039.7	--	10412.7

Summary Base Year 2002 $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Prod Est)	5223.7	577.0	--	5800.7
Previous Changes				
Economic	--	--	--	--
Quantity	--	+784.9	--	+784.9
Schedule	+1091.3	--	--	+1091.3
Engineering	+77.0	--	--	+77.0
Estimating	+0.9	+1104.0	--	+1104.9
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+1169.2	+1888.9	--	+3058.1
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	+276.5	+79.8	--	+356.3
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+276.5	+79.8	--	+356.3
Total Changes	+1445.7	+1968.7	--	+3414.4
CE - Cost Variance	6669.4	2545.7	--	9215.1
CE - Cost & Funding	6669.4	2545.7	--	9215.1

Previous Estimate: September 2012

RDT&E	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+2.3
Revised estimate due to Interim Contractor Support (ICS) and Key Management Infrastructure (KMI) funding plus up for FY 2014-2017. (Estimating)	+219.3	+288.8
Adjustment for current and prior escalation. (Estimating)	-1.3	-1.7
Revised estimate to reflect program restructure (Estimating)	+58.5	+73.8
RDT&E Subtotal	+276.5	+363.2

Procurement	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	-0.1
Adjustment for current and prior escalation. (Estimating)	+4.8	+5.7
Revised estimate to reflect prior year actuals. (Estimating)	+12.6	+15.1
Revised estimate to reflect program restructure (Estimating)	+62.4	+42.8
Procurement Subtotal	+79.8	+63.5

Cost Variance

AEHF SV 5-6

Summary Then Year $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Prod Est)	73.8	3414.4	--	3488.2
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	--	--	--	--
Other	--	--	--	--
Support	--	--	--	--
Subtotal	--	--	--	--
Current Changes				
Economic	+1.6	+106.1	--	+107.7
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-2.1	-616.0	--	-618.1
Other	--	--	--	--
Support	--	--	--	--
Subtotal	-0.5	-509.9	--	-510.4
Total Changes	-0.5	-509.9	--	-510.4
CE - Cost Variance	73.3	2904.5	--	2977.8
CE - Cost & Funding	73.3	2904.5	--	2977.8

Summary Base Year 2002 $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Prod Est)	59.1	2656.0	--	2715.1
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	--	--	--	--
Other	--	--	--	--
Support	--	--	--	--
Subtotal	--	--	--	--
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-1.6	-457.7	--	-459.3
Other	--	--	--	--
Support	--	--	--	--
Subtotal	-1.6	-457.7	--	-459.3
Total Changes	-1.6	-457.7	--	-459.3
CE - Cost Variance	57.5	2198.3	--	2255.8
CE - Cost & Funding	57.5	2198.3	--	2255.8

Previous Estimate: September 2012

RDT&E	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+1.6
Adjustment for current and prior escalation. (Estimating)	-0.5	-0.6
Refined estimate to reflect prior year actuals. (Estimating)	-0.4	-0.6
Revised estimate to reflect the application of new outyear escalation indices. (Estimating)	-0.7	-0.9
RDT&E Subtotal	-1.6	-0.5

Procurement	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+106.1
Adjustment for current and prior escalation. (Estimating)	-21.1	-26.8
Reduction to support higher Air Force priority. (Estimating)	-2.2	-2.8
Reduced estimate to reflect program effeciencies for Space Vehicles (SV) 5-6 production and launch operations; savings applied to higher Air Force needs. (Estimating)	-377.5	-507.1
Revised estimate to reflect the application of new outyear escalation guidance. (Estimating)	-56.9	-79.3
Procurement Subtotal	-457.7	-509.9

Contracts

Appropriation: Procurement	
Contract Name	**SDD Contract**
Contractor	Lockheed Martin
Contractor Location	Sunnyvale, CA 94089
Contract Number, Type	F04701-02-C-0002/2, CPAF
Award Date	November 16, 2001
Definitization Date	August 15, 2002

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
573.7	N/A	1	913.6	N/A	1	911.8	913.6

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (4/25/2013)	+78.6	-0.6
Previous Cumulative Variances	+63.3	-0.1
Net Change	+15.3	-0.5

Cost And Schedule Variance Explanations

The favorable net change in the cost variance is due to efficiencies in AEHF SV 3 storage activities, Mini-Final Integrated System Test, and Post Storage Functional Test.

The unfavorable net change in the schedule variance is due to understated performance as a result of a delay in the processing of a schedule change request.

Contract Comments

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to contract modifications for AEHF SV 3 launch operations, additional thermal vacuum testing, an overrun and various other Engineering Change Proposals.

This contract is for AEHF SV 3.

Appropriation: Procurement

Contract Name	**SDD Contract**
Contractor	Lockheed Martin
Contractor Location	Sunnyvale, CA 94089
Contract Number, Type	F04701-02-C-0002/3, CPIF
Award Date	November 16, 2001
Definitization Date	August 15, 2002

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
123.9	N/A	1	1793.2	N/A	1	1792.7	1793.2

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (4/30/2013)	+15.1	-5.4
Previous Cumulative Variances	+17.0	+9.8
Net Change	-1.9	-15.2

Cost And Schedule Variance Explanations

The unfavorable net change in the cost variance is due to rework on AEHF SV 4 caused by a hydrogen poisoning issue with an integrated circuit.

The unfavorable net change in the schedule variance is due to the late delivery of a subassembly from a vendor on AEHF SV 4 and delays in completion of tasks associated with performance specs/design and analysis reviews for Field Programmable Gate Array on AEHF SV 5-6 long lead.

Contract Comments

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to contract modifications for AEHF SV 4 production, AEHF SV 5-6 long lead, and the AEHF SV 6 KI-54D cryptographic device.

This contract is for AEHF SV 4 production, AEHF SV 5-6 long lead and the AEHF SV 6 KI-54D cryptographic device.

Deliveries and Expenditures

AEHF SV 1-4

Deliveries To Date	Plan To Date	Actual To Date	Total Quantity	Percent Delivered
Development	2	2	2	100.00%
Production	0	0	2	0.00%
Total Program Quantities Delivered	2	2	4	50.00%

Expenditures and Appropriations (TY $M)			
Total Acquisition Cost	10412.7	Years Appropriated	19
Expenditures To Date	8149.6	Percent Years Appropriated	79.17%
Percent Expended	78.27%	Appropriated to Date	9727.4
Total Funding Years	24	Percent Appropriated	93.42%

The above data is current as of 3/8/2013.

AEHF SV 5-6

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

Expenditures and Appropriations (TY $M)			
Total Acquisition Cost	2977.8	Years Appropriated	3
Expenditures To Date	230.3	Percent Years Appropriated	27.27%
Percent Expended	7.73%	Appropriated to Date	1295.9
Total Funding Years	11	Percent Appropriated	43.52%

The above data is current as of 3/8/2013.

Operating and Support Cost

AEHF SV 1-4

Assumptions and Ground Rules

Cost Estimate Reference:

The December 2011 Operating and Support (O&S) program office estimate included AEHF SV 1-6 through FY 2030.

The Financial Management Procedures Document provides the specific details of the transfer of funds from the Ministry of Defence, Secretary of State for Defence of the United Kingdom of Great Britain and Northern Ireland, Minister of Defence, of the Kingdom of The Netherlands and Department of National Defence of Canada to the DoD in accordance with paragraph 5.2 of the Memorandum of Understanding between the Secretary of Defense on behalf of the DoD of the United States of America and the aforementioned Departments concerning O&S of Advanced EHF Military Satellite Communications (MILSATCOM).

Sustainment Strategy:

The O&S costs support a four satellite constellation from FY 2015 through FY 2030. The estimates assume that AEHF and Milstar will be operated in parallel by the 4th Space Operations Squadron at Schriever Air Force Base. The Military Satellite Communications (MILSATCOM) Directorate is working to develop new sustainment contract to consolidate Protected Satellite Communications activities for AEHF and Milstar satellite systems.

Antecedent Information:

The Milstar cost estimate is based on validated requirements in the Air Force Space Command Logistics Support Requirements Brochures built for the FY 2004 President's Budget Request. The Milstar O&S costs coverall operational activities for both the space segment (5 satellites) and ground segment for FY 2009 - FY 2018.

These estimates were finalized April 15, 2003 with Air Force Space Command's budget request to Headquarters Air Force.

Unitized O&S Costs BY2002 $M		
Cost Element	**AEHF SV 1-4 Annual Average Cost for AEHF System**	**Milstar (Antecedent) Annual Average for System**
Unit-Level Manpower	19.420	16.900
Unit Operations	0.053	13.200
Maintenance	14.294	3.900
Sustaining Support	54.956	39.000
Continuing System Improvements	34.611	0.000
Indirect Support	3.220	7.200
Other	0.000	0.000
Total	126.554	80.200

Unitized Cost Comments:

AEHF Annual Average for Constellation numbers above reflect costs for planning usage and monitoring health of the AEHF constellation. The formula used to generate the average annual cost:
(AEHF SV 1-4 O&S Cost + AEHF SV 5-6 O&S cost)/16 years

	Total O&S Cost $M			
	Current Production APB Objective/Threshold		Current Estimate	
	AEHF SV 1-4		AEHF SV 1-4	Milstar (Antecedent)
Base Year	1143.6	1258.0	1143.6	801.5
Then Year	1593.6	N/A	1593.6	899.8

Total O&S Costs Comments:

No change in total AEHF O&S costs from previous December 2011 AEHF SAR. New report format required breakout of AEHF SV 1-4 and AEHF SV 5-6 costs for comparison to Acquisition Program Baseline (APB) Objective/Threshold values.

The MILSATCOM Directorate will develop a new cost model in FY 2013 to include updating total O&S costs. O&S costs data were gathered by a Tiger Team whose efforts were to consolidate both Protected Satellite Communications contract activities for AEHF and legacy Milstar satellite systems.

Disposal Costs

Disposal costs are not included in the above estimate. The disposal estimate is to be determined.

AEHF SV 5-6

Assumptions and Ground Rules

Cost Estimate Reference:

The December 2011 Operating and Support (O&S) program office estimate included AEHF SV 1-6 through FY 2030.

The Financial Management Procedures Document provides the specific details of the transfer of funds from the Ministry of Defence, Secretary of State for Defence of the United Kingdom of Great Britain and Northern Ireland, Minister of Defence, of the Kingdom of The Netherlands and Department of National Defence of Canada to the DoD in accordance with paragraph 5.2 of the Memorandum of Understanding between the Secretary of Defense on behalf of the DoD of the United States of America and the aforementioned Departments concerning O&S of Advanced EHF Military Satellite Communications (MILSATCOM).

Sustainment Strategy:

The O&S costs support a four satellite constellation from FY 2015 through FY 2030. The estimates assume that AEHF and Milstar will be operated in parallel by the 4th Space Operations Squadron at Schriever Air Force Base. The Military Satellite Communications (MILSATCOM) Directorate is working to develop new sustainment contract to consolidate Protected Satellite Communications activities for AEHF and Milstar satellite systems.

Antecedent Information:

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These estimates were finalized April 15, 2003 with Air Force Space Command's budget request to Headquarters Air Force.

Unitized O&S Costs BY2002 $M		
Cost Element	**AEHF SV 5-6 Annual Average Cost for AEHF System**	**Milstar (Antecedent) Annual Average for System**
Unit-Level Manpower	19.420	16.900
Unit Operations	0.053	13.200
Maintenance	14.294	3.900
Sustaining Support	54.956	39.000
Continuing System Improvements	34.611	0.000
Indirect Support	3.220	7.200
Other	0.000	0.000
Total	126.554	80.200

Unitized Cost Comments:

AEHF Annual Average for Constellation numbers above reflect costs for planning usage and monitoring health of the AEHF constellation. The formula used to generate the average annual cost:
(AEHF SV 1-4 O&S Cost + AEHF SV 5-6 O&S cost)/16 years

	Total O&S Cost $M			
	Current Production APB Objective/Threshold		Current Estimate	
	AEHF SV 5-6		AEHF SV 5-6	Milstar (Antecedent)
Base Year	881.3	969.4	881.3	801.5
Then Year	1453.8	N/A	1453.8	899.8

Total O&S Costs Comments:

No change in total AEHF O&S costs from previous December 2011 AEHF SAR. New report format required breakout of AEHF SV 1-4 and AEHF SV 5-6 costs for comparison to APB Objective/Threshold values.

The MILSATCOM Directorate will develop a new cost model in FY 2013 to include updating total O&S costs. O&S costs data were gathered by a Tiger Team whose efforts were to consolidate both Protected Satellite Communications contract activities for AEHF and legacy Milstar satellite systems.

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