



Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-372



Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS)

As of FY 2011 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

Table of Contents

Common Acronyms and Abbreviations for MDAP Programs	3
Program Information	5
Responsible Office	5
References	5
Mission and Description	6
Executive Summary	7
Threshold Breaches	9
Schedule	10
Performance	12
Track to Budget	13
Cost and Funding	14
Low Rate Initial Production	23
Foreign Military Sales	24
Nuclear Costs	24
Unit Cost	25
Cost Variance	28
Contracts	31
Deliveries and Expenditures	33
Operating and Support Cost	34

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

Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS) (JLENS)

DoD Component

Army

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Date

Assigned: June 26, 2008

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References

SAR Baseline (Development Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated August 5, 2005

Approved APB

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated August 5, 2005

Mission and Description

The mission of the Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS) is to provide elevated, persistent, Over-The-Horizon (OTH) surveillance and fire control quality data on Army and Joint networks enabling protection of the United States, Allied and Coalition forces, as well as critical geo-political assets from Cruise Missiles, Aircraft, Unmanned Aerial Vehicles (UAVs), Tactical Ballistic Missiles (TBMs), Large Caliber Rockets (LCRs), and Surface Moving Targets (SMTs). JLENS is a critical part of the Army's future Integrated Air and Missile Defense (IAMD) architecture and is a Joint Service interest program. A JLENS Orbit is comprised of two systems: a fire control radar system and a wide-area surveillance radar system. Each radar system employs a separate 74-meter tethered aerostat, mobile mooring station, radar and associated communications payload processing station and ground support equipment. JLENS uses advanced sensor and networking technologies to provide 360-degree, wide-area surveillance and precision tracking of land attack cruise missiles. The JLENS information is distributed via joint service networks and contributes to the development of a single integrated air picture. JLENS has the capability of detecting and tracking surface moving targets, detecting tactical ballistic missiles at boost phase and large caliber rockets during the ascent phase. JLENS also performs as a multi-role platform to enable extended range command and control linkages, communications relay and battlefield situational awareness.

Executive Summary

The Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS) Product Office successfully conducted Critical Design Readiness Reviews (CDRRs) on the following Prime Items: Platform (March 2008), Surveillance Radar (September 2008) and Communication Processing Group (September 2008).

Using the prime item CDRRs as a design foundation, the JLENS Team conducted a successful Orbit Critical Design Review (CDR) in December 2008. The review of the system design included hardware, software, supportability and system performance. The CDR demonstrated that the Orbit design met requirements and was of sufficient maturity to continue to fabrication, assembly, integration and test.

Initial integration of the JLENS All-Software Precision/Surveillance Emulation in Real Time (JASPER) model into the Navy Integrated Fire Control-Counter Air Federation model was completed in December 2008 demonstrating that JASPER could operate within the From-the-Sea kill chain simulation environment.

In December 2008, the Army Acquisition Executive (AAE) chaired a U.S. Army Trigger Event Configuration Steering Board (CSB) on the JLENS program. The AAE reviewed and approved the JLENS program restructure strategy. The Army supported the overall Army Integrated Air and Missile Defense (IAMD) program strategy, which caused the Army to extend the JLENS Engineering and Manufacturing Development phase by 12 months and delay Low Rate Initial Production until Fiscal Year (FY) 2012 (ten-month delay). The CSB briefing outlined the projected baseline program cost and schedule details and revised dates for major test events, delivery of First Unit Equipped (FUE) and Milestone C. The CSB approved the way-ahead strategy and informed the Defense Acquisition Executive via a memorandum dated January 22, 2009.

The Cruise Missile Defense Systems (CMDS) Project Manager (PM) provided a briefing to the Office of the Secretary of Defense (OSD) in January 2009, which included a JLENS program overview and the impact of the Army's decision to extend the program to support development of an Army IAMD capability. No major issues were raised.

The FY 2010 President's Budget, released in May 2009, reflected the Army initiated program restructure as approved by the AAE at the December 2008 CSB. The program restructure resulted in an Acquisition Program Baseline (APB) breach for both cost and schedule. A Program Deviation Report was approved by the Program Executive Office Missile and Space in May 2009 and submitted to the Army staff. JLENS coordinated with the Army Cost Review Board (ACRB) Working Group to develop a draft Army Cost Position (ACP), which was presented to the ACRB in July 2009. Upon closure of remaining actions, the ACP will undergo final review and approval. A revised APB will then be prepared and submitted.

The JLENS First Flight Demonstration was successfully conducted in August 2009 at the TCOM manufacturing facility in Elizabeth City, NC. The 74-meter aerostat was elevated for the first time to an altitude of 3,000 feet, the maximum altitude allowed by the Federal Aviation Administration for aerostat testing in the airspace surrounding Elizabeth City. This demonstration was the first step in the platform integration of the JLENS mobile mooring station with a first of its kind 74-meter aerostat.

JLENS Immersion Day #3 was conducted in September 2009. The purpose of the meeting was to provide JLENS overview briefings, introduce the JLENS strategic basing approach, and provide a briefing on the CMDS long term vision to the leadership of the newly formed Fires Center of Excellence at Fort Sill, Oklahoma. The briefings were well received by representatives from the Capabilities Development and Integration Directorate, US Army Training and Doctrine Command (TRADOC) Capabilities Manager, Directorate of Training and Development and Fires Center of Excellence Integration.

The first JLENS Fire Control Radar antenna successfully completed Near Field Range (NFR) testing in November 2009. The array was fully populated with transmit/receive inline microwave modules, time delay units, subarray modules, cabling and other hardware items required for an operational antenna. The Receiver/Exciter was installed, integrated and tested with the antenna. Post NFR analysis is ongoing to verify performance/compliance with the antenna specifications.

The CMDS PM briefed the annual CSB in November 2009. The briefing provided information on the current status of the

program, recent de-scoping activities and opportunities for lifecycle cost savings through modification of a requirement and the current stationing approach. The principals concurred with the PM's recommendations to conduct further analysis of relaxing the current system emplacement/displacement requirement from 72 to 120 hours and to further analyze the feasibility of a strategic stationing approach to JLENS. The intent is to complete the analysis and present it in the first available appropriate forum, not later than the next annual CSB.

The JLENS PM briefed the Weapon System Review in November 2009. The briefing provided information on the current financial status of the program across Research, Development, Test, and Evaluation, Production, Operations and Maintenance, Army and Military Construction appropriations. The brief was well received and all actions have been closed.

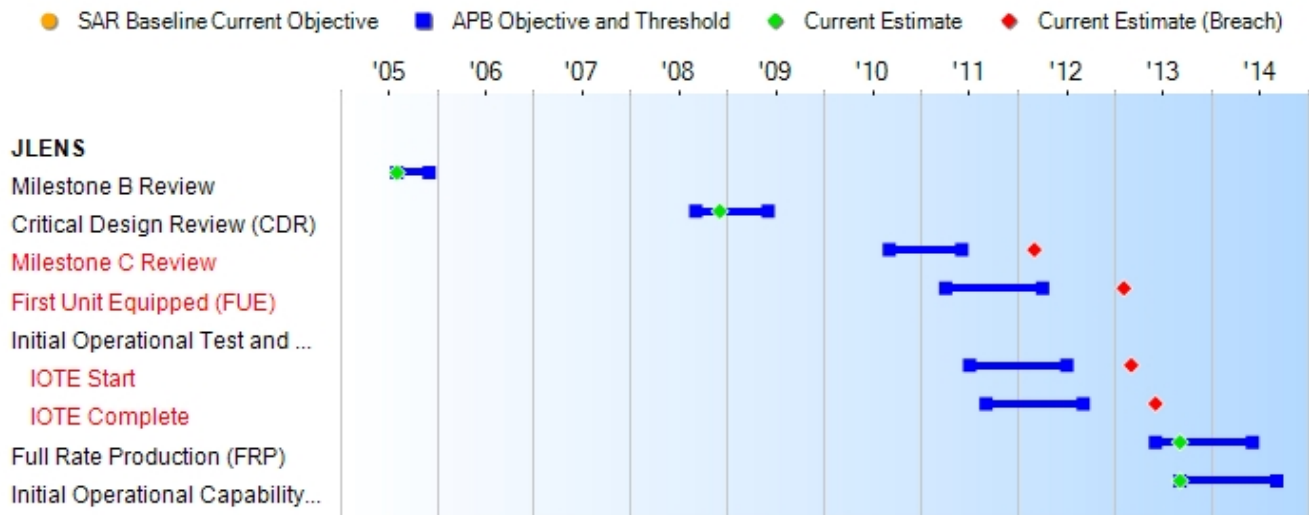
The FY 2011 President's Budget reduced the JLENS program funding in FY 2010 by \$31.7 million below the FY 2010 President's Budget. This reduction further impacted the program, which was already undergoing restructure. All FY 2010 funds are currently allocated to accomplish mission requirements with no other funding available to make up this current year reduction. The JLENS Product Office developed an FY 2010 program and contract restructure plan and determined additional funding was required in FY 2011 and FY 2012 to mitigate the funding reduction. Assessments indicate approximately \$43 million above current funding is required in FY 2011- FY 2012 to offset this FY 2010 reduction. If this additional funding is received and no further reductions are forthcoming, JLENS will remain on schedule to accomplish Initial Operational Capability in fourth quarter FY 2013.

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

Threshold Breaches

APB Breaches		Explanation of Breach
Schedule	<input checked="" type="checkbox"/>	The Army directed program restructure reflected in the FY 2010 President's Budget resulted in Acquisition Program Baseline (APB) breaches for Schedule, Procurement, Program Acquisition Unit Cost (PAUC), and Average Procurement Unit Cost (APUC).
Performance	<input type="checkbox"/>	
Cost	RDT&E <input type="checkbox"/>	Revised requirements for site activation, including facilities and infrastructure, resulted in an APB cost breach for Military Construction (MILCON).
	Procurement <input checked="" type="checkbox"/>	
MILCON <input checked="" type="checkbox"/>		
Acq O&M <input type="checkbox"/>		
O&S Cost	<input checked="" type="checkbox"/>	The FY 2010 President's Budget, released in May 2009, reflected the Army initiated program restructure as approved by the Army Acquisition Executive (AAE) at the December 2008 Configuration Steering Board (CSB). The program restructure resulted in an APB breach for both cost and schedule. A Program Deviation Report was approved by the Program Executive Office Missile and Space in May 2009 and submitted to the Army staff. JLENS coordinated with the Army Cost Review Board (ACRB) Working Group to develop a draft Army Cost Position (ACP), which was presented to the ACRB in July 2009. Upon closure of remaining actions, the ACP will undergo final review and approval. A revised APB will then be prepared and submitted.
Unit Cost	PAUC <input checked="" type="checkbox"/>	
	APUC <input checked="" type="checkbox"/>	
Nunn-McCurdy Breaches		
Current UCR Baseline		
	PAUC None	
	APUC None	
Original UCR Baseline		
	PAUC None	
	APUC None	

Schedule



Schedule Events				
Events	SAR Baseline Development Estimate	Current APB Development Objective/Threshold		Current Estimate
Milestone B Review	Aug 2005	Aug 2005	Dec 2005	Aug 2005
Critical Design Review (CDR)	Sep 2008	Sep 2008	Jun 2009	Dec 2008 (Ch-1)
Milestone C Review	Sep 2010	Sep 2010	Jun 2011	Mar 2012 ¹ (Ch-2)
First Unit Equipped (FUE)	Apr 2011	Apr 2011	Apr 2012	Feb 2013 ¹ (Ch-2)
Initial Operational Test and Evaluation (IOTE)				
IOTE Start	Jul 2011	Jul 2011	Jul 2012	Mar 2013 ¹ (Ch-2)
IOTE Complete	Sep 2011	Sep 2011	Sep 2012	Jun 2013 ¹ (Ch-2)
Full Rate Production (FRP)	Jun 2013	Jun 2013	Jun 2014	Sep 2013 (Ch-2)
Initial Operational Capability (IOC)	Sep 2013	Sep 2013	Sep 2014	Sep 2013

¹ APB Breach

Change Explanations

(Ch-1) Critical Design Review was accelerated from February 2009 to December 2008 due to contractor progress.
 (Ch-2) The following milestones changed due to the Army directed program restructure in FY 2009 and a Congressional reduction in FY 2010: Milestone C Review moved from March 2011 to March 2012, First Unit Equipped moved from September 2011 to February 2013, Initial Operation Test and Evaluation (IOTE) Start moved from March 2012 to March 2013, IOTE Complete moved from May 2012 to June 2013, and Full Rate Production decision moved from June 2013 to September 2013.

Notes

The Engineering and Manufacturing Development (EMD) phase of the JLENS program will produce two EMD units, one of which will be used for the EMD First Unit Equipped in FY 2013, followed by Initial Operational Test and Evaluation and Initial Operational Capability in fourth quarter FY 2013.

Performance

Performance Characteristics				
SAR Baseline Development Estimate	Current APB Development Objective/Threshold		Demonstrated Performance	Current Estimate
KPP 1 Single Integrated Air Picture (SIAP)				
Surveillance coverage (deg)				
360	360	360	TBD	360
KPP 2 Integrated Fire Control (IFC)				
Forward Pass (FP)	Forward Pass (FP)	Engage-on-Remote (EOR)	TBD	Engage on Remote (EOR)
KPP 3 Combat Identification (CID)				
Identification Friend or Foe (IFF)				
All DoD Validated IFF and Warsaw Pact/ Coalition modes	All DoD Validated IFF and Warsaw Pact/ Coalition modes	All DoD validated IFF modes	TBD	All DOD Validated IFF and Warsaw Pact/Coalition modes
Precise Participant Location and Identification (PPLI) Correlation				
Correlated PPLI messages w/JLENS organic tracks	Correlated PPLI messages w/JLENS organic tracks	Correlated PPLI messages w/JLENS organic tracks	TBD	Correlated PPLI messages with JLENS organic tracks
KPP 4 C4I Interoperability				
Information Exchange Requirements (IERs)				
100% of all top level IERs	100% of all top level IERs	100% of all top level critical IERs	TBD	100% of all top level IERs
Theater Air and Missile Defense Integrated Architecture				
Available behavior models	Available behavior models	Data complete-ness, data availability, and common processing	TBD	Available behavior models
Net Ready KPP				
Develop Migration Plan to show how we plan to meet NR-KPP	Develop Migration Plan to show how we plan to meet NR-KPP	Develop Migration Plan to show how we plan to meet NR-KPP	TBD	Develop migration plan to show how we plan to meet NR-KPP

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

Requirements Reference

Operational Requirements Document (ORD) dated February 24, 2004

Change Explanations

None

Track to Budget

RDT&E

Appn	BA	PE	
Army	2040	07	0102419A
	Project	Name	
	E55	Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS) (Sunk)	

Procurement

Appn	BA	PE	
Army	2035	02	0214400A
	Line Item	Name	
	52860161	Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS)	

MILCON

Appn	BA	PE	
Army	2050	01	0202096A
	Project	Name	
	070666	Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS) Battery	
	071090	Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS) Battery	
	070103	Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS) Battery	
Army	2050	01	0805796A
	Project	Name	
	888410	Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS) Battery	
	068203	JLENS Complex for 31st Air Defense Artillery (ADA) Brigade	

Cost and Funding

Cost Summary

Total Acquisition Cost							
Appropriation	BY 2005 \$M			BY 2005 \$M	TY \$M		
	SAR Baseline Development Estimate	Current APB Development Objective/Threshold		Current Estimate	SAR Baseline Development Estimate	Current APB Development Objective	Current Estimate
RDT&E	1760.0	1760.0	1936.0	1919.6	1948.0	1948.0	2143.0
Procurement	4027.0	4027.0	4429.7	4491.3 ¹	5126.0	5126.0	5722.8
Flyaway	--	--	--	3784.9	--	--	4821.5
Recurring	--	--	--	3622.2	--	--	4614.8
Non Recurring	--	--	--	162.7	--	--	206.7
Support	--	--	--	706.4	--	--	901.3
Other Support	--	--	--	521.2	--	--	665.2
Initial Spares	--	--	--	185.2	--	--	236.1
MILCON	63.0	63.0	69.3	161.6 ¹	77.0	77.0	198.0
Acq O&M	0.0	0.0	--	0.0	0.0	0.0	0.0
Total	5850.0	5850.0	N/A	6572.5	7151.0	7151.0	8063.8

¹ APB Breach

Total Quantity			
Quantity	SAR Baseline Development Estimate	Current APB Development	Current Estimate
RDT&E	2	2	2
Procurement	14	14	14
Total	16	16	16

Quantity Notes

The two RDT&E units are considered fully configured and production representative.

The unit of measure is a JLENS orbit, which is comprised of two systems: a fire control radar system and a wide-area surveillance radar system. A total of 14 JLENS production orbits is required by the Operational Requirements Document.

Cost and Funding

Funding Summary

Appropriation Summary									
FY 2011 President's Budget / December 2009 SAR (TY\$ M)									
Appropriation	Prior	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	To Complete	Total
RDT&E	1147.5	328.4	372.5	176.2	118.4	0.0	0.0	0.0	2143.0
Procurement	0.0	0.0	0.0	470.7	419.9	427.6	394.3	4010.3	5722.8
MILCON	0.0	20.0	0.0	44.6	0.0	0.0	68.3	65.1	198.0
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2011 Total	1147.5	348.4	372.5	691.5	538.3	427.6	462.6	4075.4	8063.8
PB 2009 Total	1172.3	354.8	780.7	642.5	412.4	710.3	709.5	2717.8	7500.3
Delta	-24.8	-6.4	-408.2	49.0	125.9	-282.7	-246.9	1357.6	563.5

Quantity Summary										
FY 2011 President's Budget / December 2009 SAR (TY\$ M)										
Quantity	Undistributed	Prior	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	To Complete	Total
Development	2	0	0	0	0	0	0	0	0	2
Production	0	0	0	0	1	1	1	1	10	14
PB 2011 Total	2	0	0	0	1	1	1	1	10	16
PB 2009 Total	2	0	0	1	1	1	2	2	7	16
Delta	0	0	0	-1	0	0	-1	-1	3	0

Cost and Funding

Annual Funding By Appropriation

Annual Funding							
2040 RDT&E Research, Development, Test, and Evaluation, Army							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2006	--	--	--	--	--	--	99.9
2007	--	--	--	--	--	--	237.8
2008	--	--	--	--	--	--	464.9
2009	--	--	--	--	--	--	344.9
2010	--	--	--	--	--	--	328.4
2011	--	--	--	--	--	--	372.5
2012	--	--	--	--	--	--	176.2
2013	--	--	--	--	--	--	118.4
Subtotal	2	--	--	--	--	--	2143.0

Annual Funding 2040 RDT&E Research, Development, Test, and Evaluation, Army							
Fiscal Year	Quantity	BY 2005 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2006	--	--	--	--	--	--	94.9
2007	--	--	--	--	--	--	220.6
2008	--	--	--	--	--	--	423.3
2009	--	--	--	--	--	--	310.3
2010	--	--	--	--	--	--	292.2
2011	--	--	--	--	--	--	326.2
2012	--	--	--	--	--	--	151.8
2013	--	--	--	--	--	--	100.3
Subtotal	2	--	--	--	--	--	1919.6

Annual Funding 2035 Procurement Other Procurement, Army								
Fiscal Year	Quantity	TY \$M						
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program	
2012	1	365.6	--	21.8	387.4	83.3	470.7	
2013	1	330.3	--	15.5	345.8	74.1	419.9	
2014	1	339.0	--	13.6	352.6	75.0	427.6	
2015	1	321.6	--	13.7	335.3	59.0	394.3	
2016	1	340.0	--	13.8	353.8	58.8	412.6	
2017	1	322.8	--	14.0	336.8	72.9	409.7	
2018	2	654.6	--	28.2	682.8	92.2	775.0	
2019	2	659.5	--	28.4	687.9	101.0	788.9	
2020	2	646.9	--	28.7	675.6	102.0	777.6	
2021	2	634.5	--	29.0	663.5	103.2	766.7	
2022	--	--	--	--	--	39.6	39.6	
2023	--	--	--	--	--	40.2	40.2	
Subtotal	14	4614.8	--	206.7	4821.5	901.3	5722.8	

Annual Funding 2035 Procurement Other Procurement, Army								
Fiscal Year	Quantity	BY 2005 \$M						
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program	
2012	1	313.3	--	18.7	332.0	71.4	403.4	
2013	1	278.3	--	13.1	291.4	62.4	353.8	
2014	1	280.9	--	11.3	292.2	62.1	354.3	
2015	1	262.0	--	11.2	273.2	48.1	321.3	
2016	1	272.4	--	11.1	283.5	47.0	330.5	
2017	1	254.3	--	11.0	265.3	57.4	322.7	
2018	2	507.0	--	21.8	528.8	71.5	600.3	
2019	2	502.3	--	21.6	523.9	76.9	600.8	
2020	2	484.5	--	21.5	506.0	76.3	582.3	
2021	2	467.2	--	21.4	488.6	76.0	564.6	
2022	--	--	--	--	--	28.7	28.7	
2023	--	--	--	--	--	28.6	28.6	
Subtotal	14	3622.2	--	162.7	3784.9	706.4	4491.3	

Annual Funding 2050 MILCON Military Construction, Army	
Fiscal Year	TY \$M
	Total Program
2010	20.0
2011	--
2012	44.6
2013	--
2014	--
2015	68.3
2016	65.1
Subtotal	198.0

Annual Funding 2050 MILCON Military Construction, Army	
Fiscal Year	BY 2005 \$M
	Total Program
2010	17.5
2011	--
2012	37.7
2013	--
2014	--
2015	54.9
2016	51.5
Subtotal	161.6

MILCON funding shown excludes cost budgeted for non-system specific facilities (barracks) in JLENS MILCON Program Elements.

Low Rate Initial Production

Item	Initial LRIP Decision	Current Total LRIP
Approval Date	8/5/2005	8/5/2005
Approved Quantity	2	2
Reference	ADM	ADM
Start Year	2011	2012
End Year	2012	2013

The August 5, 2005, Acquisition Decision Memorandum authorized JLENS to procure two orbits in Low Rate Initial Production (LRIP). This exceeds 10 percent of the total production quantity of 14 orbits because it is not possible to procure a fraction of an orbit.

Foreign Military Sales

None

Nuclear Costs

None

Unit Cost

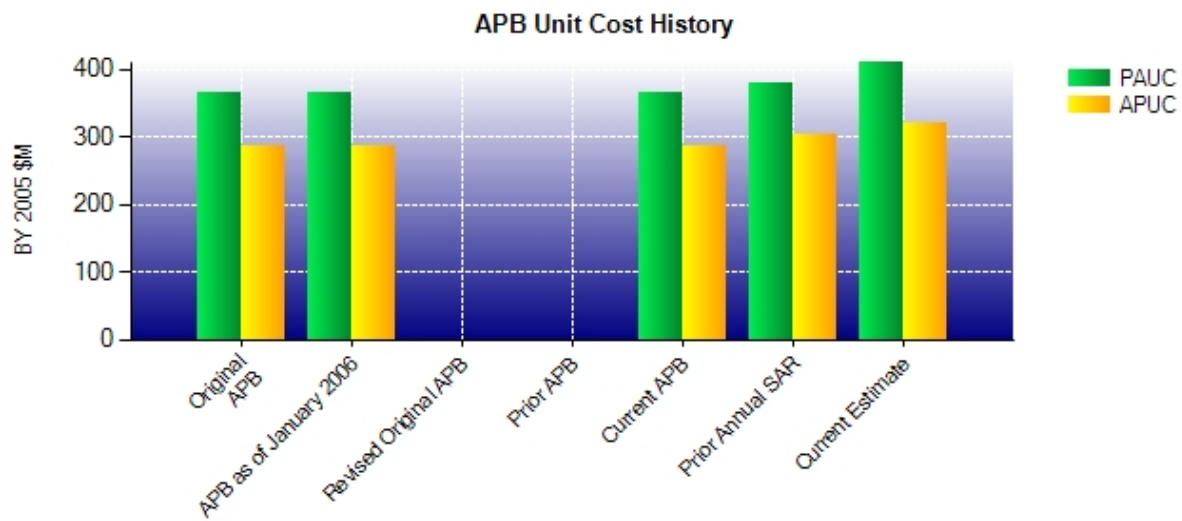
Unit Cost Report

Item	BY 2005 \$M	BY 2005 \$M	% Change
	Current UCR Baseline (Aug 2005 APB)	Current Estimate (Dec 2009 SAR)	
Program Acquisition Unit Cost			
Cost	5850.0	6572.5	
Quantity	16	16	
Item	365.625	410.781¹	+12.35
Average Procurement Unit Cost			
Cost	4027.0	4491.3	
Quantity	14	14	
Unit Cost	287.643	320.807¹	+11.53

Item	BY 2005 \$M	BY 2005 \$M	% Change
	Original UCR Baseline (Aug 2005 APB)	Current Estimate (Dec 2009 SAR)	
Program Acquisition Unit Cost			
Cost	5850.0	6572.5	
Quantity	16	16	
Unit Cost	365.625	410.781	+12.35
Average Procurement Unit Cost			
Cost	4027.0	4491.3	
Quantity	14	14	
Unit Cost	287.643	320.807	+11.53

¹ APB Unit Cost Breach

Unit Cost History



Item	Date	BY 2005 \$M		TY \$M	
		PAUC	APUC	PAUC	APUC
Original APB	Aug 2005	365.625	287.643	446.938	366.143
APB as of January 2006	Aug 2005	365.625	287.643	446.938	366.143
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	Aug 2005	365.625	287.643	446.938	366.143
Prior Annual SAR	Dec 2007	380.538	302.507	468.769	386.550
Current Estimate	Dec 2009	410.781	320.807	503.988	408.771

SAR Unit Cost History

Current SAR Baseline to Current Estimate (TY \$M)									
Initial PAUC Development Estimate	Changes								PAUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
446.938	-7.963	0.000	20.131	0.000	33.938	0.000	10.944	57.050	503.988

Current SAR Baseline to Current Estimate (TY \$M)									
Initial APUC Development Estimate	Changes								APUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
366.143	-9.607	0.000	7.464	0.000	32.264	0.000	12.507	42.628	408.771

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	Aug 2005	N/A	Aug 2005
Milestone C	N/A	Sep 2010	N/A	Mar 2012
IOC	N/A	Sep 2013	N/A	Sep 2013
Total Cost (TY \$M)	N/A	7151.0	N/A	8063.8
Total Quantity	N/A	16	N/A	16
PAUC	N/A	446.938	N/A	503.988

Cost Variance

Summary TY \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Development Estimate)	1948.0	5126.0	77.0	7151.0
Previous Changes				
Economic	+28.9	+50.9	+2.0	+81.8
Quantity	--	--	--	--
Schedule	--	-43.0	--	-43.0
Engineering	--	--	--	--
Estimating	+30.3	+204.8	+2.4	+237.5
Other	--	--	--	--
Support	--	+73.0	--	+73.0
Subtotal	+59.2	+285.7	+4.4	+349.3
Current Changes				
Economic	-21.4	-185.4	-2.4	-209.2
Quantity	--	--	--	--
Schedule	+217.6	+147.5	--	+365.1
Engineering	--	--	--	--
Estimating	-60.4	+246.9	+119.0	+305.5
Other	--	--	--	--
Support	--	+102.1	--	+102.1
Subtotal	+135.8	+311.1	+116.6	+563.5
Total Changes	+195.0	+596.8	+121.0	+912.8
Current Estimate	2143.0	5722.8	198.0	8063.8

Summary BY 2005 \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Development Estimate)	1760.0	4027.0	63.0	5850.0
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	+26.1	+158.5	+4.4	+189.0
Other	--	--	--	--
Support	--	+49.6	--	+49.6
Subtotal	+26.1	+208.1	+4.4	+238.6
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	+187.5	--	--	+187.5
Engineering	--	--	--	--
Estimating	-54.0	+191.4	+94.2	+231.6
Other	--	--	--	--
Support	--	+64.8	--	+64.8
Subtotal	+133.5	+256.2	+94.2	+483.9
Total Changes	+159.6	+464.3	+98.6	+722.5
Current Estimate	1919.6	4491.3	161.6	6572.5

Previous Estimate: December 2007

RDT&E	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-21.4
Adjustment for current and prior escalation. (Estimating)	+8.8	+9.8
Program restructure and schedule replan due to Army-directed funding changes. (Schedule)	+187.5	+217.6
Budget reduction for Small Business Innovation Research and Small Business Technology Transfer. (Estimating)	-21.2	-23.2
Congressional general budget reductions including contractor reductions and non-fuel, non-pay purchase reductions. (Estimating)	-13.3	-15.3
Schedule replan due to FY10 Congressional reduction. (Estimating)	-28.3	-31.7
RDT&E Subtotal	+133.5	+135.8

Procurement	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-185.4
Schedule change for delay in the start of production from FY 2011 to FY 2012 plus rephasing of annual buy quantities in FY 2014 through FY 2021. (Schedule)	0.0	+147.5
FY 2011 funding eliminated due to delay in the start of production to FY 2012. (Estimating)	-34.8	-39.9
Increase in hardware cost calculations and associated methodologies as a result of the Army Cost Review Board recommendations. (Estimating)	+238.7	+301.8
Congressional general budget reductions including contractor reductions and non-fuel, non-pay purchase reductions. (Estimating)	-12.5	-15.0
Increase in Other Support requirements in FY 2022 and FY 2023. (Support)	+39.5	+63.1
Increase in estimate for Initial Spares based on revised analysis of requirements. (Support)	+25.3	+39.0
Procurement Subtotal	+256.2	+311.1

MILCON	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-2.4
Adjustment for current and prior escalation. (Estimating)	+0.4	+0.5
Increase in estimate for site activation to include facilities and infrastructure. (Estimating)	+93.8	+118.5
MILCON Subtotal	+94.2	+116.6

Contracts

Contract Identification

Appropriation: RDT&E
Contract Name: JLENS SDD (CLIN 0017)
Contractor: Raytheon Company
Contractor Location: Andover, MA 01810
Contract Number: DASG60-98-C-0001
Contract Type: Cost Plus Incentive Fee (CPIF)
Award Date: October 27, 2005
Definitization Date: December 14, 2006

Contract Price

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
1428.8	N/A	2	1591.8	N/A	2	1629.8	1649.4

Contract Variance

Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/31/2009)	-42.1	-22.4
Previous Cumulative Variances	-1.2	-6.4
Net Change	-40.9	-16.0

Cost and Schedule Variance Explanations

General Contract Variance Explanation

The unfavorable net change in the Cost Variance of \$40.9 million is primarily attributed to design complexities associated with the Surveillance Radar (SuR) Hardware and the Platform Mobile Mooring Station hardware. These design complexities resulted in more labor cost than originally planned. The design has since been completed and over 95% of Engineering and Manufacturing Development hardware has been ordered (over 75% is on hand). Cost variance degradation has been reversed in the first quarter of FY 2010.

The unfavorable net change in the Schedule Variance of \$16.0 million is primarily attributed to design complexities associated with the SuR Hardware and Fire Control Radar Servo and Bridge Fabrication. These design complexities resulted in unplanned schedule slips. The design is now over 90% complete thus minimizing future delays.

The JLENS Product Manager is assessing scope redirections and cost reduction initiatives to offset the Variance At Completion.

Notes

Restructure Change Order dated June 1, 2009, increased the Current Target Contract Price to \$1,591.8 million and extended the Period of Performance to September 30, 2013. Definitization of this change order is expected in March 2010 and an Integrated Baseline Review will be conducted in April 2010.

Deliveries and Expenditures

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	0	0	2	0.00%
Production	0	0	14	0.00%
Total Program Quantity Delivered	0	0	16	0.00%

Expended and Appropriated (TY \$M)			
Total Acquisition Cost	8063.8	Years Appropriated	5
Expended to Date	1475.9	Percent Years Appropriated	27.78%
Percent Expended	18.30%	Appropriated to Date	1495.9
Total Funding Years	18	Percent Appropriated	18.55%

Operating and Support Cost

Assumptions and Ground Rules

Estimate is based on approved JLENS Cost Analysis Requirements Description, Version 3, May 23, 2005, and updated assumptions for military personnel, deployment schedule, contractor logistics support maintenance concept, and vehicle quantities.

Assumptions include:

Twenty-year life cycle for each orbit fielded.

A JLENS battery consists of 128 personnel for operation of one orbit based on the most recent Table of Organizational Equipment.

Eleven JLENS orbits are costed in Operating and Support (O&S) (6 Active Component Batteries, 4 National Guard Batteries and 1 trainer).

The cumulative total years of operation for the eleven orbits is 232 (\$20.4 million per orbit per year x 232 total years for 11 orbits = \$4,738.1 million total O&S Cost).

Each orbit will operate 2,142 hours per year.

JLENS maintenance concept will be in accordance with the Army standard - Two maintenance levels: field and sustainment.

Pending the Business Case Analysis to be performed prior to Milestone C, the maintenance concept for JLENS unique hardware is assumed to be contractor logistics support.

Replacement of tethers and aerostats is included in Unit Level Consumption.

Replacement and upgrade of information systems hardware will occur every five years after initial fielding with Common Hardware Software equipment.

Training will occur at Ft. Bliss, Texas.

There is no antecedent system.

Cost Estimate Reference:

None

Sustainment Strategy:

None

Antecedent Information:

None

Unitized O&S Costs BY2005 \$M		
Cost Element	JLENS Average Annual Cost Per Orbit	Antecedent System (Antecedent)
Mission Pay & Allowance	5.710	--
Unit Level Consumption	2.080	--
Intermediate Maintenance	--	--
Depot Maintenance	2.920	--
Contractor Support	5.650	--
Sustaining Support	3.120	--
Indirect	0.930	--
Other	--	--
Total	20.410	--

Unitized Cost Comments:

None

Item	Total O&S Cost \$M			
	JLENS		Antecedent System (Antecedent)	
	Current Development APB Objective/Threshold	Current Estimate		
Base Year	4178.0	4595.8	4738.1¹	N/A
Then Year	6724.0	N/A	7829.8	N/A

¹ APB O&S Cost Breach

Total O&S Cost Comment

None

Disposal Estimate Details

Date of Estimate:

Source of Estimate:

Disposal/Demilitarization Total Cost (BY 2005 \$M):