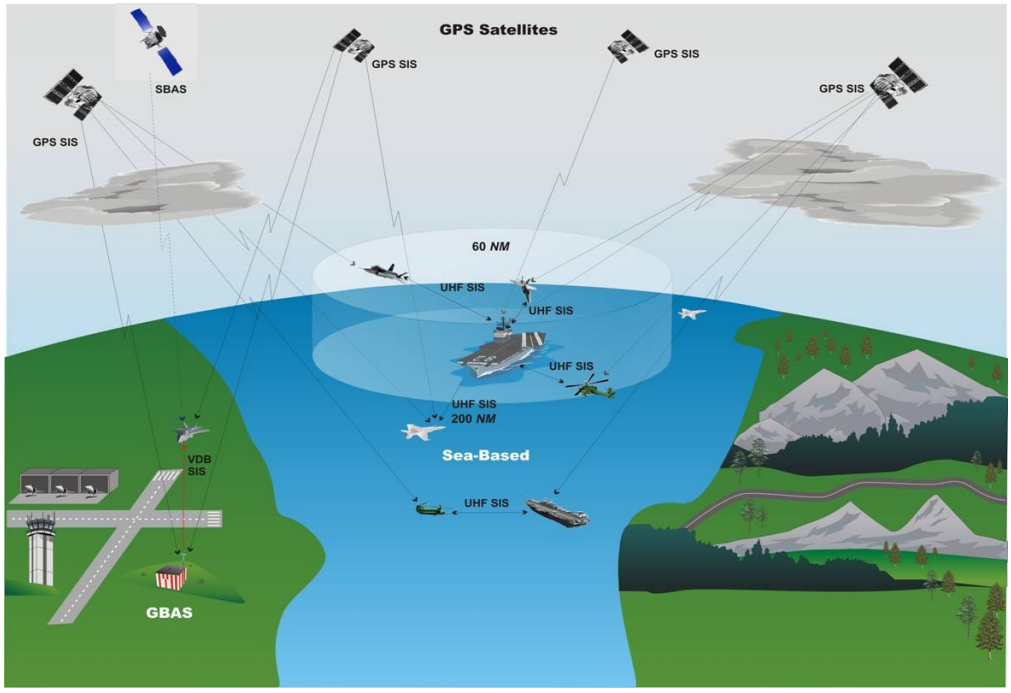
Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-238



Joint Precision Approach and Landing System Increment 1A (JPALS Inc 1A)

As of December 31, 2012

Defense Acquisition Management
Information Retrieval
(DAMIR)

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Program Information

Program Name

Joint Precision Approach and Landing System Increment 1A (JPALS Inc 1A)

DoD Component

Navy

Responsible Office

Responsible Office

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Date Assigned July 25, 2011

References

SAR Baseline (Development Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated December 19, 2008

Approved APB

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated December 19, 2008

Mission and Description

The Joint Precision Approach and Landing System (JPALS) is a joint interest program with the Navy as the Department of Defense (DoD) lead component. JPALS is a Global Positioning System (GPS)-based precision approach and landing system that will replace several aging and obsolete aircraft landing systems with a family of systems that is more affordable, will function in more operational environments, and support all DoD Land and Sea Based applications. The National Defense Strategy of the United States of America calls for highly mobile forces that can rapidly respond to crises worldwide. Success in meeting this challenge requires the ability to land aviation assets virtually anywhere, at any time. JPALS will provide this capability by being rapidly deployable, survivable, and interoperable among the U.S. Services and with U.S. allies, as well as with civil aircraft and landing facilities. JPALS will eventually support unmanned and highly automated aircraft and will be able to operate during restricted Emission Control (EMCON) conditions.

The approved JPALS Acquisition Strategy defines seven acquisition increments, based on technology maturity and Service needs. Inc 1, Sea Based JPALS, is separated into two phases: Inc 1A ship based systems and Inc 1B aircraft integration.

The JPALS Inc 1 Capability Development Document (CDD) approved by a Joint Requirements Oversight Council Memorandum (JROCM) on March 16, 2007, directs the U.S. Navy to be the lead Service for JPALS.

Inc 2 encompasses all Fixed and Mobile Systems that support 200 feet Decision Height (DH) and ½ Statute Mile (SM) visibility for auto-land of properly equipped aircraft. The JPALS Inc 2 CDD was signed on January 19, 2010.

Inc 3 encompasses Fixed and Mobile Systems to support Federal Aviation Administration (FAA) certification to 100 feet DH and ¼ SM visibility and a Sea Based system for auto-land of properly equipped aircraft.

Inc 4 will provide a Sea Based JPALS capability that supports 100 feet DH and ¼ NM (Nautical Mile) visibility, including auto-land and Unmanned Aerial Vehicle (UAV) support.

Inc 5 will encompass Land Based man-pack systems certified to minimums based on Service needs.

Inc 6 will support Special Operations Forces, mobility missions, and subsequent combat operations with an autonomous approach and landing capability.

Inc 7 is an upgrade to the Sea Based back-up capability, involving reliability, maintainability, and life-cycle improvements to the AN/SPN-41 Instrument Carrier Landing System (ICLS).

Currently, only Inc 1 and 2 have been approved by the JROC.

Executive Summary

The program reporting in this SAR reflects JPALS Inc 1A only.

JPALS Inc 1A successfully executed a checkout flight with an Avionics Test Kit (AVTK) equipped King Air test aircraft against Engineering Development Model (EDM) 2 at Naval Air Station (NAS) Patuxent River in February 2012. The program conducted a successful Test Readiness Review (TRR) in early May 2012 and commenced Integrated Test (IT) later that month. EDM 5 installation on CVN-77 was completed in October 2012 and sea trials commenced in December 2012.

A June 2012 quarterly exception SAR reported a breach to Milestone C in the JPALS Inc 1A Acquisition Program Baseline (APB). From 2009 to 2012, several shifts in CVN-77 installation availability occurred, resulting in a delay to the start of shipboard IT and Operational Assessment (OA) testing. As a result, Milestone C is now scheduled for November 2013 causing a breach to the APB threshold of August 2013.

The above schedule impacts necessitated a decrease in one unit from Research, Development, Test and Evaluation (RDT&E) and an increase in one unit to Other Procurement, Navy (OPN) resulting in a new procurement quantity of 27 units. In addition to the increase of one unit to the procurement profile, the program has realized fixed cost increases as a result of extending the production schedule. The combination of the increase to the procurement units, as well as the increase in fixed costs, has caused the program to realize a breach to procurement cost in the currently approved JPALS Inc 1A APB.

A Program Deviation Report capturing the above schedule and procurement cost breaches was received by the Milestone Decision Authority (MDA) in January 2013.

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

Threshold Breaches

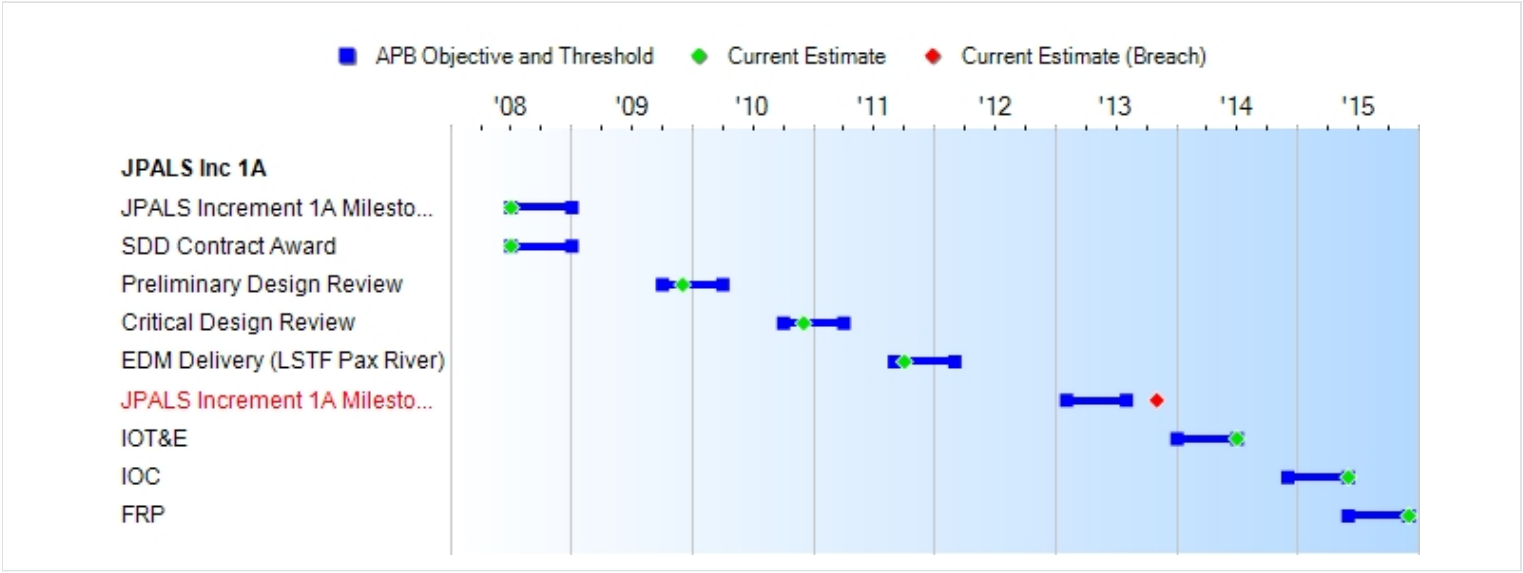
APB Breaches		
Schedule		☑
Performance		☐
Cost	RDT&E	☐
	Procurement	☑
	MILCON	☐
	Acq O&M	☐
O&S Cost		☐
Unit Cost	PAUC	☐
	APUC	☐

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

Explanation of Breach

The schedule and procurement cost breaches were previously reported in the June 2012 SAR.

Schedule



Milestones	SAR Baseline Dev Est	Current APB Development Objective/Threshold		Current Estimate	
JPALS Increment 1A Milestone B	JUL 2008	JUL 2008	JAN 2009	JUL 2008	
SDD Contract Award	JUL 2008	JUL 2008	JAN 2009	JUL 2008	
Preliminary Design Review	OCT 2009	OCT 2009	APR 2010	DEC 2009	
Critical Design Review	OCT 2010	OCT 2010	APR 2011	DEC 2010	
EDM Delivery (LSTF Pax River)	SEP 2011	SEP 2011	MAR 2012	OCT 2011	
JPALS Increment 1A Milestone C	FEB 2013	FEB 2013	AUG 2013	**NOV 2013**[1]	
IOT&E	JAN 2014	JAN 2014	JUL 2014	JUL 2014	(Ch-1)
IOC	DEC 2014	DEC 2014	JUN 2015	JUN 2015	(Ch-1)
FRP	JUN 2015	JUN 2015	DEC 2015	DEC 2015	(Ch-1)

[1] *APB Breach*

Acronyms And Abbreviations

EDM - Engineering Development Model
FRP - Full Rate Production
IOC - Initial Operational Capability
IOT&E - Initial Operational Test and Evaluation
LSTF - Landing Systems Test Facility
Pax - Patuxent
SDD - System Development and Demonstration

Change Explanations

(Ch-1) The current estimates for the following milestones changed: IOT&E from January 2014 to July 2014, IOC from December 2014 to June 2015, and FRP from June 2015 to December 2015.

Memo

Multiple slips in CVN-77 installation availability have impacted JPALS Inc 1A Integrated Test (IT) and Operational Assessment (OA) schedules resulting in an anticipated schedule breach to Milestone C in the current Acquisition Program Baseline (APB).

Performance

Characteristics	SAR Baseline Dev Est	Current APB Development Objective/Threshold		Demonstrated Performance	Current Estimate
Network Ready: The system must support Net-Centric military operations. The system must be able to enter and be managed in the network, and exchange data in a secure manner to enhance mission effectiveness. The system must continuously provide survivable, interoperable, secure, and operationally effective information exchanges to enable a Net-Centric military capability.	The system must fully support execution of operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for Net-Centric military 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) NCOW RM Enterprise Services, 4) IA requirements including availability,	The system must fully support execution of operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for Net-Centric military 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) NCOW RM Enterprise Services, 4) IA requirements including availability,	The system must fully support execution of joint critical operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for transition to Net-Centric military 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) NCOW RM Enterprise Services, 4) IA requirements	TBD	The system must fully support execution of joint critical operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for transition to Net-Centric military 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) NCOW RM Enterprise Services, 4) IA requirements

	integrity, authenticat-ion, confidential-ity, and nonrepudiat-ion, and issuance of an ATO by the DAA, and 5) Operationally effective information exchanges; mission critical performance and IA attributes; data correctness, data availability, and consistent data processing specified in the applicable joint and system integrated architecture views.	integrity, authenticat-ion, confidential-ity, and nonrepudiat-ion, and issuance of an ATO by the DAA, and 5) Operationally effective information exchanges; mission critical performance and IA attributes; data correctness, data availability, and consistent data processing specified in the applicable joint and system integrated architecture views.	including availability, integrity, authenticat-ion, confidential-ity, and nonrepudiat-ion, and issuance of an IATO by the (DAA), and 5) Operationally effective information exchanges; mission critical performance and IA attributes; data correctness, data availability, and consistent data processing specified in the applicable joint and system integrated architecture views.		including availability, integrity, authentica-tion, confidential-ity, and nonrepudiati-on, and issuance of an IATO by the (DAA), and 5) Operationally effective information exchanges; mission critical performance and IA attributes; data correctness, data availability, and consistent data processing specified in the applicable joint and system integrated architecture views.	
Guidance Quality	Certification for operations in 0 ft ceiling and 0 NM visibility conditions.	Certification for operations in 0 ft ceiling and 0 NM visibility conditions.	Sufficient quality to allow the Service to certify the sea-based system for use in 200 ft ceiling and ½ NM visibility weather conditions.	TBD	Meeting Threshold with margin. Sufficient quality to allow the Service to certify the sea-based system for use in 200 ft ceiling and ½ NM	(Ch-1)

					visibility weather conditions.
Manpower	Should reduce current manning levels when currently fielded systems are phased out. Should require no dedicated personnel. Should be reduced to no more than one qualified air traffic controller.	Should reduce current manning levels when currently fielded systems are phased out. Should require no dedicated personnel. Should be reduced to no more than one qualified air traffic controller.	The total number of dedicated maintenance and/or logistics personnel needed to support Sea-Based JPALS per shift shall be no more than one person. The number of qualified final controller positions per shift on CVN/LH ship classes shall be no more than two air traffic controllers.	TBD	Current manning level
Operational Availability (Ao) in Clear Air	JPALS Ao requirement in clear air for manned aircraft to 200 ft - ½ NM mins should be at least 99.7%.	JPALS Ao requirement in clear air for manned aircraft to 200 ft - ½ NM mins should be at least 99.7%.	JPALS Ao requirement in clear air for manned aircraft to 200 ft - ½ NM mins shall be at least 99.0%.	TBD	99.1%

Requirements Source: Capability Development Document (CDD) dated March 16, 2007

Acronyms And Abbreviations

ATO - Approval to Operate
CVN - Carrier Vessel Nuclear
DAA - Designated Approval Authority
DISR - DOD Information Technology Standards and Profile Registry
ft - Feet
GIG - Global Information Grid
IA - Information Assurance
IATO - Interim Approval to Operate
IT - Information Technology
KIP - Key Interface Profile
LH - Amphibious Assault Ship
mins - Minimums
NCOW RM - Net Centric Operations and Warfare Reference Model
NM - Nautical Mile
TBD - To Be Determined
TV - Technical Standards View

Change Explanations

(Ch-1) Updated current estimate wording. Removed the word exceeding and replaced with meeting.

Track To Budget

RDT&E				
APPN 1319	BA 04	PE 0603860N	(Navy)	
	Project 2329	Joint Precision Approach and Landing System		
Procurement				
APPN 1810	BA 02	PE 0305014N	(Navy)	
	ICN 2867	Joint Precision Approach and Landing System		
APPN 1810	BA 08	PE 0204161N	(Navy)	
	ICN 902010	Joint Precision Approach and Landing System		
MILCON				
APPN 1205	BA 01	PE 0805376N	(Navy)	
	Project P977	Facilities Restoration and Modification - RDT&E		(Sunk)

Cost and Funding

Cost Summary

Total Acquisition Cost and Quantity

Appropriation	BY2008 $M			BY2008 $M	TY $M		
	SAR Baseline Dev Est	Current APB Development Objective/Threshold		Current Estimate	SAR Baseline Dev Est	Current APB Development Objective	Current Estimate
RDT&E	753.7	753.7	829.1	777.4	781.4	781.4	813.5
Procurement	202.9	202.9	223.0	**233.1** [1]	243.7	243.7	282.5
Flyaway	153.9	--	--	150.3	185.0	--	183.8
Recurring	153.9	--	--	150.3	185.0	--	183.8
Non Recurring	0.0	--	--	0.0	0.0	--	0.0
Support	49.0	--	--	82.8	58.7	--	98.7
Other Support	38.9	--	--	48.9	46.6	--	58.6
Initial Spares	10.1	--	--	33.9	12.1	--	40.1
MILCON	6.6	6.6	7.3	6.6	6.8	6.8	6.8
Acq O&M	0.0	0.0	--	0.0	0.0	0.0	0.0
Total	963.2	963.2	N/A	1017.1	1031.9	1031.9	1102.8

[1] ***APB Breach***

Quantity	SAR Baseline Dev Est	Current APB Development	Current Estimate
RDT&E	12	12	10
Procurement	25	25	27
Total	37	37	37

Unit of Measure: The physical architecture of a JPALS system consists of multiple equipment racks, processing equipment, sensors, radios, and antennas.

Cost and Funding

Funding Summary

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

Appropriation	Prior	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	To Complete	Total
RDT&E	613.1	78.4	42.0	19.2	23.8	18.7	18.3	0.0	813.5
Procurement	0.0	0.0	0.0	32.2	59.8	56.6	46.1	87.8	282.5
MILCON	6.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.8
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2014 Total	619.9	78.4	42.0	51.4	83.6	75.3	64.4	87.8	1102.8
PB 2013 Total	622.0	78.4	55.5	77.1	78.5	78.8	5.7	0.0	996.0
Delta	-2.1	0.0	-13.5	-25.7	5.1	-3.5	58.7	87.8	106.8

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	10	0	0	0	0	0	0	0	0	10
Production	0	0	0	0	2	6	6	7	6	27
PB 2014 Total	10	0	0	0	2	6	6	7	6	37
PB 2013 Total	11	0	0	2	9	9	6	0	0	37
Delta	-1	0	0	-2	-7	-3	0	7	6	0

Cost and Funding

Annual Funding By Appropriation

Annual Funding TY$
1319 | RDT&E | Research, Development, Test, and Evaluation, Navy

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
2001	--	--	--	--	--	--	7.4
2002	--	--	--	--	--	--	13.2
2003	--	--	--	--	--	--	15.3
2004	--	--	--	--	--	--	17.7
2005	--	--	--	--	--	--	25.9
2006	--	--	--	--	--	--	32.4
2007	--	--	--	--	--	--	36.0
2008	--	--	--	--	--	--	66.7
2009	--	--	--	--	--	--	74.1
2010	--	--	--	--	--	--	135.2
2011	--	--	--	--	--	--	118.8
2012	--	--	--	--	--	--	70.4
2013	--	--	--	--	--	--	78.4
2014	--	--	--	--	--	--	42.0
2015	--	--	--	--	--	--	19.2
2016	--	--	--	--	--	--	23.8
2017	--	--	--	--	--	--	18.7
2018	--	--	--	--	--	--	18.3
Subtotal	**10**	**--**	**--**	**--**	**--**	**--**	**813.5**

Annual Funding BY$
1319 | RDT&E | Research, Development, Test, and Evaluation, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2008 $M	Non End Item Recurring Flyaway BY 2008 $M	Non Recurring Flyaway BY 2008 $M	Total Flyaway BY 2008 $M	Total Support BY 2008 $M	Total Program BY 2008 $M
2001	--	--	--	--	--	--	8.5
2002	--	--	--	--	--	--	15.0
2003	--	--	--	--	--	--	17.2
2004	--	--	--	--	--	--	19.3
2005	--	--	--	--	--	--	27.6
2006	--	--	--	--	--	--	33.4
2007	--	--	--	--	--	--	36.3
2008	--	--	--	--	--	--	66.0
2009	--	--	--	--	--	--	72.4
2010	--	--	--	--	--	--	130.1
2011	--	--	--	--	--	--	111.4
2012	--	--	--	--	--	--	64.7
2013	--	--	--	--	--	--	70.7
2014	--	--	--	--	--	--	37.2
2015	--	--	--	--	--	--	16.7
2016	--	--	--	--	--	--	20.3
2017	--	--	--	--	--	--	15.6
2018	--	--	--	--	--	--	15.0
Subtotal	**10**	**--**	**--**	**--**	**--**	**--**	**777.4**

Annual Funding TY$
1810 | Procurement | Other Procurement, Navy

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
2015	2	8.2	--	--	8.2	24.0	32.2
2016	6	30.6	--	--	30.6	29.2	59.8
2017	6	33.2	--	--	33.2	23.4	56.6
2018	7	38.7	--	--	38.7	7.4	46.1
2019	6	49.5	--	--	49.5	9.6	59.1
2020	--	23.6	--	--	23.6	5.1	28.7
Subtotal	**27**	**183.8**	**--**	**--**	**183.8**	**98.7**	**282.5**

Annual Funding BY$
1810 | Procurement | Other Procurement, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2008 $M	Non End Item Recurring Flyaway BY 2008 $M	Non Recurring Flyaway BY 2008 $M	Total Flyaway BY 2008 $M	Total Support BY 2008 $M	Total Program BY 2008 $M
2015	2	7.1	--	--	7.1	20.7	27.8
2016	6	25.9	--	--	25.9	24.8	50.7
2017	6	27.6	--	--	27.6	19.5	47.1
2018	7	31.6	--	--	31.6	6.0	37.6
2019	6	39.6	--	--	39.6	7.7	47.3
2020	--	18.5	--	--	18.5	4.1	22.6
Subtotal	**27**	**150.3**	**--**	**--**	**150.3**	**82.8**	**233.1**

Cost Quantity Information
1810 | Procurement | Other Procurement, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway (Aligned with Quantity) BY 2008 $M
2015	2	8.9
2016	6	28.1
2017	6	30.5
2018	7	39.8
2019	6	43.0
2020	--	--
Subtotal	**27**	**150.3**

Annual Funding TY$
1205 | MILCON | Military Construction, Navy and Marine Corps

Fiscal Year	Total Program TY $M
2008	6.8
Subtotal	**6.8**

Annual Funding BY$
1205 | MILCON | Military Construction, Navy and Marine Corps

Fiscal Year	Total Program BY 2008 $M
2008	6.6
Subtotal	**6.6**

Low Rate Initial Production

There are currently no Low Rate Initial Production (LRIP) quantities for the JPALS Inc 1A program.

Foreign Military Sales

Country	Date of Sale	Quantity	Total Cost $M	Memo
United Kingdom	6/1/2012	1	3.9	This is a technical services case.

The technical services case with the United Kingdom will provide technical studies and documentation for the integration and installation of JPALS and Precision Approach Radar (PAR) for the Queen Elizabeth Carrier (QEC) program. This will culminate with a Foreign Military Sales (FMS) procurement case for JPALS by February 2014.

Nuclear Cost

None

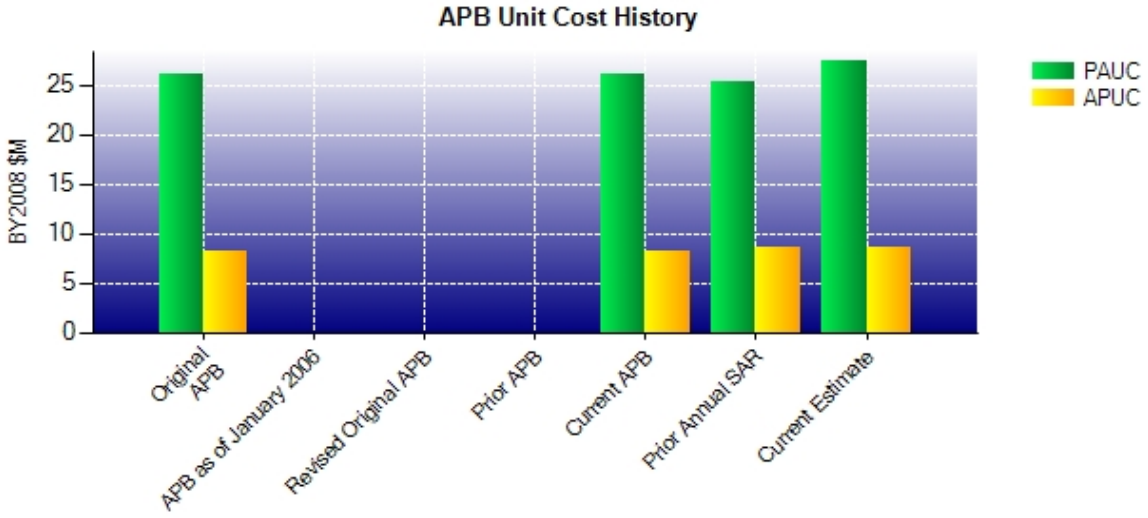
Unit Cost

Unit Cost Report

Unit Cost	BY2008 $M Current UCR Baseline (DEC 2008 APB)	BY2008 $M Current Estimate (DEC 2012 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	963.2	1017.1	
Quantity	37	37	
Unit Cost	26.032	27.489	+5.60
Average Procurement Unit Cost (APUC)			
Cost	202.9	233.1	
Quantity	25	27	
Unit Cost	8.116	8.633	+6.37

Unit Cost	BY2008 $M Original UCR Baseline (DEC 2008 APB)	BY2008 $M Current Estimate (DEC 2012 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	963.2	1017.1	
Quantity	37	37	
Unit Cost	26.032	27.489	+5.60
Average Procurement Unit Cost (APUC)			
Cost	202.9	233.1	
Quantity	25	27	
Unit Cost	8.116	8.633	+6.37

Unit Cost History



		BY2008 $M		TY $M	
	Date	PAUC	APUC	PAUC	APUC
Original APB	DEC 2008	26.032	8.116	27.889	9.748
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	DEC 2008	26.032	8.116	27.889	9.748
Prior Annual SAR	DEC 2011	25.368	8.535	26.919	9.946
Current Estimate	DEC 2012	27.489	8.633	29.805	10.463

SAR Unit Cost History

Current SAR Baseline to Current Estimate (TY $M)

Initial PAUC Dev Est	Changes								PAUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
27.889	0.041	0.243	0.397	2.284	-2.138	0.000	1.089	1.916	29.805

Current SAR Baseline to Current Estimate (TY $M)

Initial APUC Dev Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
9.748	-0.163	-0.185	0.544	0.000	-0.974	0.000	1.493	0.715	10.463

SAR Baseline History

Item/Event	SAR Planning Estimate (PE)	SAR Development Estimate (DE)	SAR Production Estimate (PdE)	Current Estimate
Milestone A	N/A	N/A	N/A	N/A
Milestone B	N/A	JUL 2008	N/A	JUL 2008
Milestone C	N/A	FEB 2013	N/A	NOV 2013
IOC	N/A	DEC 2014	N/A	JUN 2015
Total Cost (TY $M)	N/A	1031.9	N/A	1102.8
Total Quantity	N/A	37	N/A	37
Prog. Acq. Unit Cost (PAUC)	N/A	27.889	N/A	29.805

Cost Variance

Summary Then Year $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Dev Est)	781.4	243.7	6.8	1031.9
Previous Changes				
Economic	+2.8	-6.1	--	-3.3
Quantity	-5.5	+7.0	--	+1.5
Schedule	--	-0.6	--	-0.6
Engineering	--	--	--	--
Estimating	-48.1	-24.9	--	-73.0
Other	--	--	--	--
Support	--	+39.5	--	+39.5
Subtotal	-50.8	+14.9	--	-35.9
Current Changes				
Economic	+3.1	+1.7	--	+4.8
Quantity	--	+7.5	--	+7.5
Schedule	--	+15.3	--	+15.3
Engineering	+84.5	--	--	+84.5
Estimating	-4.7	-1.4	--	-6.1
Other	--	--	--	--
Support	--	+0.8	--	+0.8
Subtotal	+82.9	+23.9	--	+106.8
Total Changes	+32.1	+38.8	--	+70.9
CE - Cost Variance	813.5	282.5	6.8	1102.8
CE - Cost & Funding	813.5	282.5	6.8	1102.8

Summary Base Year 2008 $M				
	RDT&E	**Proc**	**MILCON**	**Total**
SAR Baseline (Dev Est)	753.7	202.9	6.6	963.2
Previous Changes				
Economic	--	--	--	--
Quantity	-5.1	+6.0	--	+0.9
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-38.5	-22.3	--	-60.8
Other	--	--	--	--
Support	--	+34.2	--	+34.2
Subtotal	-43.6	+17.9	--	-25.7
Current Changes				
Economic	--	--	--	--
Quantity	--	+6.0	--	+6.0
Schedule	--	+7.8	--	+7.8
Engineering	+71.6	--	--	+71.6
Estimating	-4.3	-1.1	--	-5.4
Other	--	--	--	--
Support	--	-0.4	--	-0.4
Subtotal	+67.3	+12.3	--	+79.6
Total Changes	+23.7	+30.2	--	+53.9
CE - Cost Variance	777.4	233.1	6.6	1017.1
CE - Cost & Funding	777.4	233.1	6.6	1017.1

Previous Estimate: June 2012

RDT&E	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+3.1
Additional development required for algorithm refinement. (Engineering)	+4.0	+4.5
Non-recurring engineering requirement to develop an alternate configuration for Inc 1A ship system variant resulting in a smaller footprint for air capable ships (small combatants). (Engineering)	+67.6	+80.0
Adjustment for current and prior escalation. (Estimating)	-2.3	-2.6
FY 2012 funding reprogrammed for higher Navy priorities. (Estimating)	-2.0	-2.1
RDT&E Subtotal	+67.3	+82.9

Procurement	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+1.7
Extended the life of procurement and install profile from FY 2018 to FY 2020. (Schedule)	0.0	+4.8
Additional Schedule variance for extension of procurement and install profile from FY 2018 to FY 2020. (Schedule)	+7.8	+10.5
Total Quantity variance resulting from an increase of 1 system from 26 to 27. (Subtotal)	+4.9	+6.1
Quantity variance resulting from an increase of 1 system from 26 to 27. (Quantity) (QR)	(+6.0)	(+7.5)
Allocation to Estimating resulting from Quantity change. (Estimating) (QR)	(-1.1)	(-1.4)
Increase in Other Support due to two addtional years of production. (Support)	+1.2	+2.3
Decrease in Initial Spares requirements. (Support)	-1.6	-1.5
Procurement Subtotal	+12.3	+23.9

(QR) Quantity Related

Contracts

Appropriation: RDT&E	
Contract Name	**JPALS Development Contract**
Contractor	Raytheon Company
Contractor Location	1801 Hughes Drive Fullerton, CA 92833-2200
Contract Number, Type	N00019-08-C-0034, CPAF/CPIF
Award Date	September 15, 2008
Definitization Date	September 15, 2008

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
232.8	N/A	12	259.8	N/A	13	304.8	283.2

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (2/22/2013)	-23.4	-1.4
Previous Cumulative Variances	-22.5	-2.0
Net Change	-0.9	+0.6

Cost And Schedule Variance Explanations

The unfavorable net change in the cost variance is due to increased labor hours required in the Global Positioning System (GPS) Antenna Work Breakdown Structure (WBS) element to expedite the Ship GPS Sensor Unit (SGSU) Software (SW) release in support of IT-B2. AN increase in Level of Effort (LOE) hours in Development Test and Evaluation WBS is required due to the lengthened test schedule, as well as additional effort to support risk reduction activities onboard CVN-77 and IT-B1 test events. The number of Problem Trouble Reports (PTRs) and per PTR cost are higher than anticipated in the Sea-based System installation and Installation Support WBS.

The favorable net change in the schedule variance is due to the descope of the Army Aircraft Integration Guide (AIG) AH-64D effort along with the contract nearing completion. Systems Engineering, Sea-based System installation and Installation Support, and Technical Publication WBS elements that were previously reported as delayed or delinquent continue to complete therefor contributing to the favorable variance.

Contract Comments

This contract is more than 90% complete; therefore, this is the final report for this contract.

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to modifications to adjudicate technical review action items.

The contract quantity of 13 consists of eight Engineering Development Model (EDM) units and five non-end item representative Avionics Test Kits (AVTKs).

Deliveries and Expenditures

Deliveries To Date	Plan To Date	Actual To Date	Total Quantity	Percent Delivered
Development	8	8	10	80.00%
Production	0	0	27	0.00%
Total Program Quantities Delivered	8	8	37	21.62%

Expenditures and Appropriations (TY $M)			
Total Acquisition Cost	1102.8	Years Appropriated	13
Expenditures To Date	604.0	Percent Years Appropriated	65.00%
Percent Expended	54.77%	Appropriated to Date	698.3
Total Funding Years	20	Percent Appropriated	63.32%

The above data is current as of 3/7/2013.

Operating and Support Cost

JPALS Inc 1A

Assumptions and Ground Rules

Cost Estimate Reference:

The Office of the Secretary of Defense Cost Assessment and Program Evaluation organization conducted an estimate in support of the Milestone B decision on July 14, 2008. Since then the Base Year values have decreased and time phasing has been adjusted resulting in lower Then Year values. Updated reliability projections resulted in a reduction from the 2008 estimate including the addition of a 3% Cost Growth Above Inflation (CGAI) factor to the Depot Level Repairables (DLRs). In-Service Engineering Activity (ISEA) has been added as part of the Supply Chain Management (SCM) under Sustaining Support due to its current cost benefit to legacy landing systems. Hardware modifications and software maintenance have been refined resulting in a reduction from the 2008 estimate. The hardware modifications and software maintenance have been removed from the Sustaining Support section in the initial estimate and placed in the Continuing System Improvements section in the new estimate. The estimate was updated in December 2011 based on the revised JPALS Cost Analysis Requirements Description (CARD).

Sustainment Strategy:

The sustainment strategy is still being analyzed, which includes using Performance Based Logistics. There will be a total of 29 retrofit ship and sea-based ashore units; this is not including the Operating and Support (O&S) costs for the seven Shipbuilding and Conversion (SCN) funded ships. Each SCN funded ship accounts for its own O&S cost. The system is planned to have a 20-year life after introduction to the fleet with an operational tempo of 4,000 hours per year per ship and 3,500 hours per year per sea-based-ashore.

Antecedent Information:

The antecedent system associated with this estimate is the AN/SPN-46(V)3. Legacy systems continue to experience service life adjustments and system modifications that make Total O&S Costs compilation in a static service life (e.g., 25 years) to be not credible. In addition, the capture of O&S data in available reporting systems has changed significantly over time. The Visibility and Management of Operating and Support Costs (VAMOSC) database, the Navy's official system for collecting and reporting O&S costs, provides costs from 1997-present. The cost data for platforms in existence prior to 1997 is either unavailable or incomplete. Sufficient historical data and resources do not exist to create comparable, credible Total O&S Costs.

Unitized O&S Costs BY2008 $K		
Cost Element	**JPALS Inc 1A Average Annual Cost Per System**	**AN/SPN-46(V)3 (Antecedent) Average Annual Cost Per System**
Unit-Level Manpower	0.005	0.716
Unit Operations	0.000	0.000
Maintenance	0.310	0.051
Sustaining Support	0.210	0.027
Continuing System Improvements	0.100	0.408
Indirect Support	0.000	0.000
Other	0.000	0.000
Total	0.625	1.202

Unitized Cost Comments:

The unitized costs are based on 29 retrofit ship and sea-based-ashore units with a 20-year life. The unitized costs do not include the O&S for seven SCN funded ships.

	Total O&S Cost $M			
	Current Development APB Objective/Threshold		Current Estimate	
	JPALS Inc 1A		JPALS Inc 1A	AN/SPN-46(V)3 (Antecedent)
Base Year	338.6	372.5	362.6	N/A
Then Year	520.6	N/A	480.3	N/A

Total O&S Costs Comments:

O&S cost variance due to:

- increased quanities by one
- increased the life cycle by one year
- updated component repair cost
- added In-Service Engineering Activity (ISEA) support cost
- inflation index change

Disposal Costs

Disposal costs have not been identified at this time.