

UNCLASSIFIED

PE NUMBER: 0603860F

PE TITLE: Joint Precision Approach and Landing Systems (SDD)

Exhibit R-2, RDT&E Budget Item Justification	DATE May 2009
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BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE 0603860F Joint Precision Approach and Landing Systems (SDD)
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Cost (\$ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost	6.216	7.358	23.174	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
4652 Precision Landing Systems	6.216	7.358	23.174	0.000	0.000	0.000	0.000	0.000	Continuing	TBD

(U) A. Mission Description and Budget Item Justification

Joint Precision Approach and Landing System (JPALS) is a joint effort among the USAF, Navy/USMC, and Army. The Air Force is responsible for developing the common system architecture for the Land-Based increments. The Joint Requirements Oversight Council (JROC) approved the Capability Development Document (CDD) for Increment 1 (Sea-Based) in March 2007 and transferred lead service responsibilities to the Navy. JPALS is the future precision approach and landing system for the Department of Defense (DOD). It will provide a joint operational capability for U.S. forces to perform assigned missions within and from fixed-base, tactical, shipboard, and special operations environments under a wide range of meteorological conditions. Land-Based JPALS will provide DOD civil interoperability with the Federal Aviation Administration's (FAA) Local Area Augmentation System (LAAS). JPALS is participating in the development, testing, and implementation of international standards (to include North American Treaty Organization (NATO) standardization agreements) to ensure joint, allied, and coalition interoperability. When complete, this effort will replace aging shipboard and ground-based precision landing systems (Instrument Landing System, Precision Approach Radar, Microwave Landing System, and Automated Carrier Landing Systems). JPALS will facilitate DOD missions and training by enabling US forces to land on any JPALS-equipped airfield worldwide (land and sea) under peacetime and hostile conditions. JPALS will close capability gaps identified in the 2005 JPALS Analysis of Alternatives (AoA) update. These gaps are interoperability for naval aircraft landing at shore-based airfields operated by other services, interoperability for Navy/Marine Corps and Army aircraft landing at civil airports, and for the Civil Reserve Air Fleet landing at DOD airfields. The 2005 JPALS AoA update identified a family of systems (FoS) based on Global Positioning System (GPS) technology solutions for fixed base, tactical, and sea-based environments. The AoA also identified Enhanced Vision Systems (EVS) as the best choice for mitigating the capability gaps for the Special Operations environment.

JPALS must provide needed guidance quality in the presence of GPS jamming. The JPALS architecture must be developed to integrate and synchronize with related Communication, Navigation and Surveillance/Air Traffic Management (CNS/ATM), GPS modernization initiatives, and net-centricity operations. Finally, because a cornerstone of the JPALS implementation strategy is worldwide military and civil interoperability, JPALS must harmonize with US and international civil Global Navigation Satellite Systems. Avionics in over 13,000 DOD aircraft will be modified to integrate JPALS technology.

Technology Development and DOD 5000 Milestone B entry requirements for JPALS Land-Based Increment 2 (Fixed-Base and Tactical JPALS systems) will complete in FY09. FY10 efforts will focus on the start of Land-Based JPALS System Development and Demonstration (SDD) which will complete in FY14. Activities also include studies and analysis to support both current program planning and execution and future program planning.

This program is in budget activity 4, Advanced Component Development and Prototypes Research Category 6.4B, because supportability and manufacturing process design considerations must be identified and integrated into the precision landing architecture.

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04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE

0603860F Joint Precision Approach and Landing Systems (SDD)

(U) **B. Program Change Summary (\$ in Millions)**

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) Previous President's Budget	7.451	7.479	7.872
(U) Current PBR/President's Budget	6.216	7.358	23.174
(U) Total Adjustments	-1.235	-0.121	
(U) Congressional Program Reductions		-0.101	
Congressional Rescissions		-0.020	
Congressional Increases			
Reprogrammings	-1.028		
SBIR/STTR Transfer	-0.207		

(U) **Significant Program Changes:**

JPALS System Development and Demonstration (SDD) fully funded in FYDP. Funding ramp through FY11 reflects SDD contract award and contractor development of fixed and mobile ground systems.

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BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE 0603860F Joint Precision Approach and Landing Systems (SDD)	PROJECT NUMBER AND TITLE 4652 Precision Landing Systems
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Cost (\$ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
4652 Precision Landing Systems	6.216	7.358	23.174	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

(U) A. Mission Description and Budget Item Justification

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Exhibit R-2a, RDT&E Project Justification

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BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE 0603860F Joint Precision Approach and Landing Systems (SDD)	PROJECT NUMBER AND TITLE 4652 Precision Landing Systems
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(U) <u>B. Accomplishments/Planned Program (\$ in Millions)</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) Perform anti-jam and threat analysis	0.160	0.395	
(U) Perform architecture trade studies and analyses	0.507	1.595	1.489
(U) Perform aircraft requirements and integration studies	0.266	0.100	1.000
(U) Requirements development and system design, analysis, engineering, test and evaluation	1.308	0.200	6.245
(U) Planning/Development of future JPALS increments	2.361	2.371	2.039
(U) Milestone B Preparation	1.614	2.697	2.000
(U) JPALS Increment 2 Engineering, and Manufacturing Development Phase Contract			10.401
(U) Total Cost	6.216	7.358	23.174

(U) <u>C. Other Program Funding Summary (\$ in Millions)</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							

(U) Other APPN

(U) **D. Acquisition Strategy**
 Increment 2 System Development and Demonstration (SDD) contracts for development of Fixed-Base and Tactical JPALS systems will be competitively awarded.

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Exhibit R-3, RDT&E Project Cost Analysis

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04 Advanced Component Development and Prototypes (ACD&P)				0603860F Joint Precision Approach and Landing Systems (SDD)					4652 Precision Landing Systems			
<u>(U) Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior to FY 2008 Cost</u>	<u>FY 2008 Cost</u>	<u>FY 2008 Award Date</u>	<u>FY 2009 Cost</u>	<u>FY 2009 Award Date</u>	<u>FY 2010 Cost</u>	<u>FY 2010 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
(U) <u>Product Development</u>												
Aircraft Anti-jam & Threat Analyses	C/T&M	AES, California, MD		0.160	Feb-08	0.395	Jul-09			Continuing	TBD	TBD
Architecture Trade Studies & Analyses	C/CPFF	Honeywell, Albuquerque, NM		0.507	Dec-08	1.595	Apr-09	1.489	Dec-09	Continuing	TBD	TBD
Aircraft Requirements & Integration Studies	C/T&M	AES, California, MD		0.266	Sep-08	0.100	May-09	1.000	Jan-10	Continuing	TBD	TBD
Requirements Development, System Design, Analysis, Engineering, Test and Evaluation	C/T&M	AES, California, MD		1.308	Sep-08	0.200	Feb-09	6.245	Jan-10	Continuing	TBD	TBD
Planning/Development of Future JPALS Increments	C/T&M	ESC / ETASS / PASS / (Various), Bedford, MA		2.361	Aug-08	2.371	Jan-09	2.039	Jan-10	Continuing	TBD	TBD
Milestone B preparation	C/T&M	ESC / ETASS / PASS / (Various), Bedford, MA		1.614	Mar-08	2.697	Apr-09	2.000	Jan-10	Continuing	TBD	TBD
JPALS Increment 2 Engineering, Manufacturing and Development Phase Contract	TBD	TBD						10.401	Jan-10	Continuing	TBD	TBD
Subtotal Product Development			0.000	6.216		7.358		23.174		Continuing	TBD	TBD
Remarks:												
(U) Total Cost			0.000	6.216		7.358		23.174		Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile

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BUDGET ACTIVITY

04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE

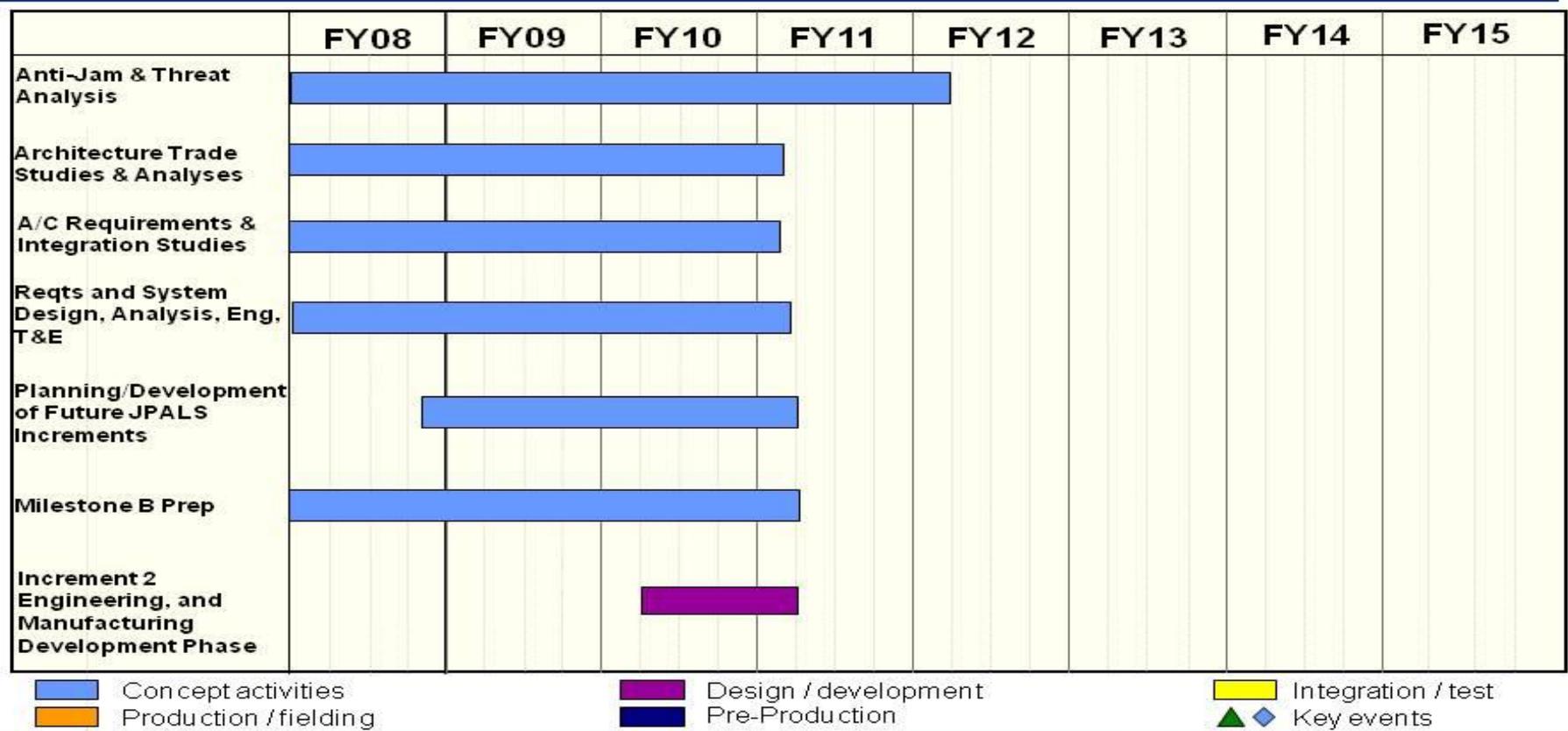
0603860F Joint Precision Approach and Landing Systems (SDD)

PROJECT NUMBER AND TITLE

4652 Precision Landing Systems



JPALS



PB10 R-Docs

Depicted by installation/production flow

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Exhibit R-4a, RDT&E Schedule Detail

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(U) Schedule Profile	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) Anti-Jam & Threat Analysis Tests	1-4Q	1-4Q	1-4Q
(U) Architecture Trade Studies and Analyses	1-4Q	1-4Q	1-4Q
(U) Aircraft Requirements & Integration Studies	1-4Q	1-4Q	1-4Q
(U) Requirements & System Design, Analysis, Engineering, and Test and Evaluation	1-4Q	1-4Q	1-4Q
(U) Planning/Development of Future JPALS Increments	4Q	1-4Q	1-4Q
(U) Milestone B Preparation	1-4Q	1-4Q	1-4Q
(U) Increment 2 Engineering, Manufacturing and Development Phase			2-4Q

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