Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 4: *Advanced Component Development & Prototypes (ACD&P)*				R-1 ITEM NOMENCLATURE PE 0603860F: *Joint Precision Approach and Landing System*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	20.856	13.952	20.112	-	20.112	52.176	72.916	65.990	28.527	Continuing	Continuing
644652: *Precision Landing Systems*	20.856	13.952	20.112	-	20.112	52.176	72.916	65.990	28.527	Continuing	Continuing

Note

The program funding includes reductions for Overhead Reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $.161M in FY12.

While the Joint Precision Approach and Landing System (JPALS) is an ACAT ID program, the Air Force Exhibit R-3 does not include "to complete" costs as the JPALS Land-Based Increment 2 (Air Force lead) is pre-Milestone B (FY15) and not Section 2366a certified. The Sea-Based Increment 1a (Navy lead) is post-Milestone B and Section 2366a certified. Reference Navy JPALS R-Doc for data (PNO 238).

Totals include funding for Program Resources Collection Process Program Number (PNO) 238, JPALS (Land-Based Increment 2).

A. Mission Description and Budget Item Justification

JPALS is an Acquisition Category ID program with joint partners for requirements and acquisition including the USAF, USN/USMC, USA, and the Federal Aviation Administration (under the Next Generation (NextGen) Air Transportation System Program). JPALS is being developed using an incremental approach employing a family of systems (FOS) to ensure joint, allied, coalition and Federal Aviation Administration/International Civil Aviation Organization interoperability. On 16 March 2007, the Joint Requirements Oversight Council (JROC) approved the Capability Development Document (CDD) for the JPALS Family of Systems (FoS) and Increment 1 for the Sea-Based System and designated the Navy as the JPALS lead Department of Defense (DoD) Component. On 19 January 2010, the JROC approved Increment 2 for the Land-Based System and designated the Air Force as the lead component for the Land-Based System.

JPALS is the next generation global positioning system (GPS)-based precision approach and landing system for the DoD. It will replace several aging and obsolete aircraft landing systems with a FoS that will function in more operational environments and in a wide range of meteorological conditions.

Because a cornerstone of the JPALS implementation strategy is worldwide and civil interoperability, JPALS must harmonize with US and International Civil Global Navigation Satellite Systems. This is being accomplished through participation in the development testing, and implementation of international standards through the North American Treaty Organization (NATO) the International Civil Aviation Organization (ICAO).

Interoperability of the JPALS ground systems with all military and civil aircraft is a key aspect of the planned system. Military aircraft must have worldwide access to civil and military airfields/air stations/operating locations in benign and hostile (jamming) environments. The JPALS Land-based Increment 2 system will provide a civil interoperable capability and also a military interoperable encrypted, jam-resistant capability.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0603860F: *Joint Precision Approach and Landing System*

FY12 efforts continue risk reduction activities related to incorporating JPALS capability in existing avionics and evolution of the acquisition strategy in preparation for Milestone B. This includes completion of the technology readiness assessment with the Office of the Secretary of Defense participation and a greater emphasis on aircraft integration activities. Test planning activity will ramp-up in advance of the Engineering, Manufacturing and Development (EMD) contract award in FY12. JPALS will close capability gaps identified in the Precision Approach and Landing Capability Initial Capabilities Document. These gaps include: 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.

This program is in budget activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	22.953	13.952	12.616	-	12.616
Current President's Budget	20.856	13.952	20.112	-	20.112
Total Adjustments	-2.097	-	7.496	-	7.496
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-0.097	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-2.000	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	7.496	-	7.496

Change Summary Explanation

The funding increase starting in FY12 reflects decision to move the JPALS Land-Based Increment 2 initial operational capability from FY19 to FY17 and Milestone B from FY15 to FY13. This change aligns the Land-Based Increment 2 with the Sea-Based Increment 1 initial operational capability timelines.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603860F: *Joint Precision Approach and Landing System*	PROJECT 644652: *Precision Landing Systems*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
644652: *Precision Landing Systems*	20.856	13.952	20.112	-	20.112	52.176	72.916	65.990	28.527	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

The program funding includes reductions for Overhead Reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $.161M in FY12.

While the Joint Precision Approach and Landing System (JPALS) is an ACAT ID program, the Air Force Exhibit R-3 does not include "to complete" costs as the JPALS Land-Based Increment 2 (Air Force lead) is pre-Milestone B (FY15) and not Section 2366a certified. The Sea-Based Increment 1a (Navy lead) is post-Milestone B and Section 2366a certified. Reference Navy JPALS R-Doc for data (PNO 238).

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A. Mission Description and Budget Item Justification

JPALS is an Acquisition Category ID program with joint partners for requirements and acquisition including the USAF, USN/USMC, USA, and the Federal Aviation Administration (under the Next Generation (NextGen) Air Transportation System Program). JPALS is being developed using an incremental approach employing a family of systems (FOS) to ensure joint, allied, coalition and Federal Aviation Administration/International Civil Aviation Organization interoperability. On 16 March 2007, the Joint Requirements Oversight Council (JROC) approved the Capability Development Document (CDD) for the JPALS Family of Systems (FoS) and Increment 1 for the Sea-Based System and designated the Navy as the JPALS lead Department of Defense (DoD) Component. On 19 January 2010, the JROC approved Increment 2 for the Land-Based System and designated the Air Force as the lead component for the Land-Based System.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603860F: *Joint Precision Approach and Landing System*	PROJECT 644652: *Precision Landing Systems*

FY12 efforts continue risk reduction activities related to incorporating JPALS capability in existing avionics and evolution of the acquisition strategy in preparation for Milestone B. This includes completion of the technology readiness assessment with the Office of the Secretary of Defense participation and a greater emphasis on aircraft integration activities. Test planning activity will ramp-up in advance of the Engineering, Manufacturing and Development (EMD) contract award in FY12. JPALS will close capability gaps identified in the Precision Approach and Landing Capability Initial Capabilities Document. These gaps include: 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.

This program is in budget activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: JPALS Engineering Support Studies and Analysis	7.800	7.873	2.000	-	2.000
Description: Provides systems engineering, prototyping and testing of component level technologies necessary for risk reduction on JPALS ***FY 2010 Accomplishments:*** Performed advanced threat mitigation studies, and modeling and simulation activities. Began avionics risk reduction activities. ***FY 2011 Plans:*** Completes advanced threat mitigation work and modeling and simulation activities. Continues avionics risk reduction activities ***FY 2012 Base Plans:*** Will Complete component technology development and avionics risk reduction activities. ***FY 2012 OCO Plans:*** Not applicable					
Title: JPALS Test and Evaluation	0.623	0.600	0.080	-	0.080
Description: Includes planning and execution of the JPALS test and evaluation program ***FY 2010 Accomplishments:*** Supported the drafting of JPALS TEMP, standup of RTO and formation of the Integrated Test Team (ITT) and drafting of the ITT Charter ***FY 2011 Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0603860F: *Joint Precision Approach and Landing System*	**PROJECT** 644652: *Precision Landing Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Continues the FY2010 activities ***FY 2012 Base Plans:*** Will Finalize the FY2010/2011 activities and supports the Source Selection and Award of the TD/EMD contract. ***FY 2012 OCO Plans:*** Not applicable					
Title: JPALS Acquisition and Technical Services Support ***Description:*** Provides Acquisition and Technical services for systems engineering and program execution for JPALS ***FY 2010 Accomplishments:*** Provided system engineering and program support services for the evaluation of work performed under the JPALS Engineering Support Studies and Analysis. Provided systems engineering support to develop the JPALS System Requirements Document and other RFP documentation. ***FY 2011 Plans:*** Continues to provide system engineering and program support services for the JPALS Engineering and Support Services and Analysis projects. Provides system engineering and program support services to complete the JPALS RFP package and other required program documentation. ***FY 2012 Base Plans:*** Provides systems engineering and program support services as advisors to the JPALS Source Selection team and to support execution of the TD/EMD contract. Provides systems engineering support to complete component technology and risk reduction efforts. ***FY 2012 OCO Plans:***	12.433	5.479	10.632	-	10.632
Title: JPALS Engineering and Manufacturing Development ***Description:*** Includes the system design, development and fabrication of JPALS Ground and Airborne systems ***FY 2010 Accomplishments:*** ***FY 2011 Plans:*** ***FY 2012 Base Plans:***	-	-	7.400	-	7.400

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603860F: *Joint Precision Approach and Landing System*	PROJECT 644652: *Precision Landing Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Supports contract award and the beginning of the TD/EMD contract. ***FY 2012 OCO Plans:***					
Accomplishments/Planned Programs Subtotals	20.856	13.952	20.112	-	20.112

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE0305114F: *Air Traffic Control and Landing Systems (OPAF)*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	13.407	Continuing	Continuing

D. Acquisition Strategy

Increment 2 Technical Development and Engineering, and Manfacturing Development (EMD) contracts for development of Fixed-Based and Tactical JPALS systems will be competitivily awarded.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603860F: *Joint Precision Approach and Landing System*	PROJECT 644652: *Precision Landing Systems*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TD/EMD	C/TBD	TBD:TBD,	-	-		7.400	May 2012	-		7.400	Continuing	Continuing	TBD
		Subtotal	-	-		7.400		-		7.400			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Anti-Jam and Threat Analysis	C/TBD	AFRL:Dayton, OH	10.000	0.500	Apr 2011	-		-		-	Continuing	Continuing	TBD
Architecture Trade Studies and Analysis	C/TBD	AES:Lex Park, MD	26.613	1.100	Apr 2011	-		-		-	Continuing	Continuing	TBD
Integration Studies	SS/CPAF	Honeywell/ BAE:Bedford/ Clearwater, FL	16.487	6.273	Apr 2011	2.000	Jan 2012	-		2.000	Continuing	Continuing	TBD
		Subtotal	53.100	7.873		2.000		-		2.000			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JPALS Responsible Test Organization (RTO)	Various	46th Test Wing:Eglin AFB, FL	1.584	0.600	Mar 2011	0.080	Jan 2012	-		0.080	Continuing	Continuing	TBD
		Subtotal	1.584	0.600		0.080		-		0.080			

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Acquisition Support	C/TBD	Quantec, Jacobs Engineering, MITRE, Telecote Cost Services, MIT LL:Bedford, MA	45.633	5.479	Apr 2011	10.632	Oct 2011	-		10.632	Continuing	Continuing	TBD

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603860F: *Joint Precision Approach and Landing System*	PROJECT 644652: *Precision Landing Systems*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	45.633	5.479		10.632		-		10.632			

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	100.317	13.952		20.112		-		20.112			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0603860F: *Joint Precision Approach and Landing System*	**PROJECT** 644652: *Precision Landing Systems*

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0603860F: *Joint Precision Approach and Landing System*	**PROJECT** 644652: *Precision Landing Systems*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Increment 2 Development	1	2010	4	2016
Anti-Jam & Threat Analysis	1	2010	4	2011
Architecture Trade Studies & Analysis	1	2010	4	2011
Aircraft Requirements & Integration Studies	1	2010	3	2014
Test Planning & Evaluation	1	2010	4	2016