

UNCLASSIFIED

PE NUMBER: 0305114F

PE TITLE: Air Traffic Control/Approach/Landing System (ATCALs)

Exhibit R-2, RDT&E Budget Item Justification	DATE February 2008
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BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0305114F Air Traffic Control/Approach/Landing System (ATCALs)
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Cost (\$ in Millions)	FY 2007 Actual	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost	3.670	8.293	6.867	3.585	3.098	3.158	3.222	Continuing	TBD
3587 Air Traffic Control Systems	3.670	8.293	6.867	3.585	3.098	3.158	3.222	Continuing	TBD

(U) A. Mission Description and Budget Item Justification

This program funds research, development, and management of new air traffic control surveillance, positioning, and precision approach capabilities. This project included the Mobile Approach Control System (MACS) which would have replaced non-standard, unsupportable, large footprint mobile radar approach systems with a common, easily-transportable system for use by both the Air National Guard and active duty AF. However, the MACS program was cancelled on 16 May 07 due to cost, schedule and technical issues. Additional funding has been added in FY08/FY09 to conduct an Analysis of Alternatives (AoA) and develop requirements and acquisition documents for a follow-on program to replace the existing 1970/80 vintage deployable Radar Approach Control Systems (RAPCONs). Funding is also provided for the Terminal Surveillance and Approach System (TSAS) upgrade to the Transportable Transponder Landing System (TTLS) which will provide a rapidly deployable, all weather, precision, terminal air traffic control capability under instrument flight rules (IFR) conditions and a quick disconnect panel and switchgear for the Edwards AFB Traffic Control (TRACON) Center. This project also funds the Air Traffic Control and Landing Systems (ATCALs) Transformation initiative which combines organizational realignments, process improvements, and investments in technology to update 20+ year old fixed and deployable ATCALs equipment. These investments will result in significant manpower and operations / maintenance savings over the next 20 years. The first phase of this initiative includes development of a deployable Instrument Landing System (ILS) and updates to fixed and deployable precision and non-precision approach control equipment such as, but not limited to, Tactical Air Navigation (TACAN), Very High Frequency Omnidirectional Range (VOR), and Air Traffic Control Radios. These efforts are key to ensuring Air Force Air Traffic Systems work collaboratively to safely and efficiently provide air traffic control (ATC) services, as well as net-centric operations within the National Airspace System (NAS) and in host nations overseas. Over the next 15 years, the Federal Aviation Administration (FAA) plans to implement new or improved capabilities into the NAS in an evolutionary manner. Included in the FAA improvements are upgrades to the Notice To Airman (NOTAM) program. The NOTAM program provides timely information regarding the status of airfield equipment and operations, as well as the status of enroute navigational aids. Finally, the ATCALs program will participate in the development, testing, and implementation of international standards (to include North Atlantic Treaty Organization (NATO) standardization agreements) to ensure joint, Allied, and coalition interoperability.

FY 2010 and beyond will see additional capabilities being planned to enable the concept of Free Flight throughout the NAS. Since the Air Force must provide the same level of air traffic service to the military and flying public, funds are required to conduct interoperability and architecture studies and analyses on a wide range of aviation concepts. Pre-planned product improvements (P3I) complement similar activities associated with other safety of flight and airspace access programs such as Communication, Navigation and Surveillance/Air Traffic Management (CNS/ATM), implementation of Automatic Dependent Surveillance-Broadcast (ADS-B) and development of remote ATC Tower capabilities.

This program is in budget activity 7, Operational System Development, because it upgrades currently fielded systems.

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BUDGET ACTIVITY

07 Operational System Development

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0305114F Air Traffic Control/Approach/Landing System (ATCALs)

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

	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Previous President's Budget	3.467	4.672	4.686
(U) Current PBR/President's Budget	3.670	8.293	6.867
(U) Total Adjustments	0.203		
(U) Congressional Program Reductions		-0.046	
Congressional Rescissions		-0.053	
Congressional Increases		3.720	
Reprogrammings	0.203		
SBIR/STTR Transfer			
(U) <u>Significant Program Changes:</u>			
FY2008 Congressional add - \$3.0M for Terminal Surveillance and Approach System (TSAS).			
FY2008 Congressional add - \$720K for Quick Disconnect Panel and Switchgear for Edwards AFB TRACON.			

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BUDGET ACTIVITY 07 Operational System Development				PE NUMBER AND TITLE 0305114F Air Traffic Control/Approach/Landing System (ATCALs)			PROJECT NUMBER AND TITLE 3587 Air Traffic Control Systems		
Cost (\$ in Millions)	FY 2007 Actual	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total
3587 Air Traffic Control Systems	3.670	8.293	6.867	3.585	3.098	3.158	3.222	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0		

(U) **A. Mission Description and Budget Item Justification**

This program funds research, development, and management of new air traffic control surveillance, positioning, and precision approach capabilities. This project included the Mobile Approach Control System (MACS) which would have replaced non-standard, unsupportable, large footprint mobile radar approach systems with a common, easily-transportable system for use by both the Air National Guard and active duty AF. However, the MACS program was cancelled on 16 May 07 due to cost, schedule and technical issues. Additional funding has been added in FY08/FY09 to conduct an Analysis of Alternatives (AoA) and develop requirements and acquisition documents for a follow-on program to replace the existing 1970/80 vintage deployable Radar Approach Control Systems (RAPCONs). Funding is also provided for the Terminal Surveillance and Approach System (TSAS) upgrade to the Transportable Transponder Landing System (TTLS) which will provide a rapidly deployable, all weather, precision, terminal air traffic control capability under instrument flight rules (IFR) conditions and a quick disconnect panel and switchgear for the Edwards AFB Traffic Control (TRACON) Center. This project also funds the Air Traffic Control and Landing Systems (ATCALs) Transformation initiative which combines organizational realignments, process improvements, and investments in technology to update 20+ year old fixed and deployable ATCALs equipment. These investments will result in significant manpower and operations / maintenance savings over the next 20 years. The first phase of this initiative includes development of a deployable Instrument Landing System (ILS) and updates to fixed and deployable precision and non-precision approach control equipment such as, but not limited to, Tactical Air Navigation (TACAN), Very High Frequency Omnidirectional Range (VOR), and Air Traffic Control Radios. These efforts are key to ensuring Air Force Air Traffic Systems work collaboratively to safely and efficiently provide air traffic control (ATC) services, as well as net-centric operations within the National Airspace System (NAS) and in host nations overseas. Over the next 15 years, the Federal Aviation Administration (FAA) plans to implement new or improved capabilities into the NAS in an evolutionary manner. Included in the FAA improvements are upgrades to the Notice To Airman (NOTAM) program. The NOTAM program provides timely information regarding the status of airfield equipment and operations, as well as the status of enroute navigational aids. Finally, the ATCALs program will participate in the development, testing, and implementation of international standards (to include North Atlantic Treaty Organization (NATO) standardization agreements) to ensure joint, Allied, and coalition interoperability.

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(U) B. Accomplishments/Planned Program (\$ in Millions)	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Perform Transportable Transponder Landing System (TTLS) Demonstrations	1.880		
(U) Terminal Surveillance and Approach System (TSAS) ATCALs		3.000	
(U) FAA NOTAMs Program	1.587		
(U) Begin AoA and develop requirements & acquisition documentation for deployable RAPCON system replacement	0.203	0.500	0.398
(U) Begin ATCALs Transformation Development		4.073	6.469
(U) TRACON Quick Connect Panel and Switchgear		0.720	
(U) Total Cost	3.670	8.293	6.867

(U) C. Other Program Funding Summary (\$ in Millions)	<u>FY 2007</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>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E									
(U) Other APPN									
(U) OPAF - BA 5 (PE 35114F) Weapon System Code CO2900			31.877					Continuing	TBD
(U) OPAF - BA 3 (PE 0305114F) Weapon System Code 833010	7.658	8.762	9.832	17.066	0.593	24.254	8.618	Continuing	TBD
(U) OPAF, BA 3, PE 0305114F), Weapon System Code 838010	18.855	9.988	3.393	19.456	24.760	23.793	22.613	Continuing	TBD
(U) OPAF, BA 3, (PE 0305114F, Weapon System Code 833020	62.212	50.037	47.224	53.819	48.610	50.056	67.757	Continuing	TBD
(U) OPAF, BA 5, (PE 0305137F) Weapon System Code 86190A Initial Spares	5.414	5.461	5.504	5.817	5.896	6.011	6.129	Continuing	TBD
(U) OPAF - BA 3 (PE 0305114F) Weapon System Code 86190A Initial Spares	2.775	3.256	0.887	0.916	0.934	0.951	0.970	Continuing	TBD

(U) **D. Acquisition Strategy**
Award multiple, competitive contract vehicles emphasizing off-the-shelf technology and maximizing the use of non-developmental items (NDIs).

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Exhibit R-3, RDT&E Project Cost Analysis

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(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 2007 Cost</u>	<u>FY 2007 Cost</u>	<u>FY 2007 Award Date</u>	<u>FY 2008 Cost</u>	<u>FY 2008 Award Date</u>	<u>FY 2009 Cost</u>	<u>FY 2009 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
(U) <u>Product Development</u> Transportable Transponder Landing System (TTLS)	C/FFP	Adv Nav & Positioning Corp; Hood River, OR	4.517	1.880	Sep-07					0.000	6.397	6.397
NOTAMs Program	GSA T&M	TBD	0.000	1.587	Feb-08					0.000	1.587	1.587
Mobile Approach Control System (MACS)	Various	Various	52.744							0.000	52.744	52.744
Terminal Surveillance and Approach System (TSAS) ATCALs	C/FFP	Adv Nav & Positioning Corp; Hood River, OR				3.000	Jun-08			0.000	3.000	3.000
TRACON Quick Connect Panel and Switchgear	TBD	TBD				0.720	May-08			0.000	0.720	0.720
Begin AoA and develop requirements & acquisition documentation for deployable RAPCON replacement system	TBD	TBD		0.203	Jan-08	0.500	Mar-08	0.398	Feb-09	Continuing	TBD	TBD
ATCALs Transformation	TBD	TBD				4.073	Jun-08	6.469	Mar-09	Continuing	TBD	TBD
Subtotal Product Development			57.261	3.670		8.293		6.867		Continuing	TBD	TBD
Remarks:												
(U) Total Cost			57.261	3.670		8.293		6.867		Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile

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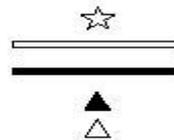
BUDGET ACTIVITY
07 Operational System Development

PE NUMBER AND TITLE
0305114F Air Traffic
Control/Approach/Landing System
(ATCALs)

PROJECT NUMBER AND TITLE
3587 Air Traffic Control Systems

Fiscal Year	FY07				FY08				FY09				FY10				FY11				FY12				FY13			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
TTLS	██████████																											
TTLS Evaluation	██████████																											
TTLS Fielding Decision							▲																					
FAA NOTAMs Development		▲																										
Terminal Surveillance Airport System (TSAS) Development/Demonstration							▲																					
Edwards AFB TRACON Quick Connect Power and Switchgear							▲																					
Deployable RAPCON Replacement AoA/Requirements/ Acquisition						▲																						
ATCALs Transformation Development Milestone C							▲																					
IOC																												

As of February 2008



★ Milestone C

Exhibit R-4a, RDT&E Schedule Detail

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BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0305114F Air Traffic Control/Approach/Landing System (ATCALs)	PROJECT NUMBER AND TITLE 3587 Air Traffic Control Systems
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(U) Schedule Profile	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Complete TTLS System Evaluation		2Q	
(U) Begin FAA NOTAM Upgrade/Development	2Q		
(U) Begin Terminal Surveillance Airport System (TSAS) Development/Demonstration		3Q	
(U) Complete Edwards AFB TRACON Quick Connect Power and Switchgear Acquisition/Installation			1Q
(U) Complete AoA and Develop Requirement & Acquisition Documentation for Deployable RAPCON Replacement			4Q
(U) Begin ATCALs Transformation Development		3Q	