

UNCLASSIFIED

PE NUMBER: 0305114F

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

Exhibit R-2, RDT&E Budget Item Justification	DATE February 2007
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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 2006 Actual	FY 2007 Estimate	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	5.908	3.467	4.672	4.686	3.619	3.128	3.188	3.253	Continuing	TBD
3587 Air Traffic Control Systems	5.908	3.467	4.672	4.686	3.619	3.128	3.188	3.253	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 includes the Mobile Approach Control System (MACS) which will replace 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. Funding is also provided for 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. 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. 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 NOTAMS 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

PE NUMBER AND TITLE

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

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

	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Previous President's Budget	2.169	0.000	0.000	2.608
(U) Current PBR/President's Budget	5.908	3.467	4.672	4.686
(U) Total Adjustments	3.739	3.467		
(U) Congressional Program Reductions				
Congressional Rescissions		-0.013		
Congressional Increases		3.480		
Reprogrammings	3.800			
SBIR/STTR Transfer	-0.061			

(U) **Significant Program Changes:**

FY06: Congressional add of \$2.2M for the Transportable Transponder Landing System (TTLS).

FY07: Congressional adds of \$1.88M for the Transportable Transponder Landing System (TTLS) and \$1.6M for the FAA NOTAMS Program.

FY06/FY07: Completion of Mobile Approach Control System (MACS) testing efforts anticipated to be funded with reprogrammed funds in execution years. \$3.8M reprogrammed in FY06.

FY08/FY09: Funds added to begin ATCALs Transformation development.

Exhibit R-2a, RDT&E Project Justification

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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 2006 Actual	FY 2007 Estimate	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	5.908	3.467	4.672	4.686	3.619	3.128	3.188	3.253	Continuing	TBD
Quantity of RDT&E Articles	0	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 includes the Mobile Approach Control System (MACS) which will replace non-standard, unsupported, large footprint mobile radar approach systems with a common, easily-transportable system for use by both the Air National Guard and active duty AF. Funding is also provided for 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. 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. 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 NOTAMS 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 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Perform Transportable Transponder Landing System (TTLS) Demonstrations	2.108	1.880		
(U) FAA NOTAMs Program		1.587		
(U) Continue Mobile Approach Control System (MACS) development/test	3.800		0.500	
(U) Begin ATCALs Transformation Development			4.172	4.686
(U) Total Cost	5.908	3.467	4.672	4.686

(U) C. Other Program Funding Summary (\$ in Millions)										
	<u>FY 2006</u>	<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>Complete</u>							
(U) AF RDT&E										
(U) Other APPN										
(U) OPAF - BA 5 (PE 35114F)										
Weapon System Code	3.765			32.000					Continuing	TBD
CO2900										
(U) OPAF - BA 3 (PE 0305114F)										
Weapon System Code 833010	36.073	12.210	12.821	25.354	17.204	0.598	24.465	8.693	Continuing	TBD
(U) OPAF, BA 3, (PE 0305137F)										
Weapon System Code 833020	59.230	53.421	50.429	53.505	55.021	55.526	55.559	55.331	Continuing	TBD
(U) OPAF, BA 5, (PE 0305137F)										
Weapon System Code 86190A	5.039	5.388	5.498	5.623	5.864	5.947	6.063	6.183	Continuing	TBD
Initial Spares										
(U) OPAF - BA 3 (PE 0305114F)										
Weapon System Code 86190A	2.431	2.775	9.078	2.731	0.926	0.942	0.959	0.978	Continuing	TBD
Initial Spares										

(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 2006 Cost</u>	<u>FY 2006 Cost</u>	<u>FY 2006 Award Date</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	2.409	2.108	Sep-06	1.880	Mar-07					0.000	6.397	4.578
NOTAMs Program	TBD	TBD				1.587	Sep-07					0.000	1.587	1.587
Mobile Approach Control System (MACS)	Various	Various	48.944	3.800	Sep-06			0.500	Feb-08			0.000	53.244	53.244
ATCALs Transformation	TBD	TBD						4.172	Feb-08	4.686	Jan-09	Continuing	TBD	TBD
Subtotal Product Development			51.353	5.908		3.467		4.672		4.686		Continuing	TBD	TBD
Remarks:														
<u>(U) Total Cost</u>			51.353	5.908		3.467		4.672		4.686		Continuing	TBD	TBD

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Exhibit R-4a, RDT&E Schedule Detail	DATE February 2007
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(U) <u>Schedule Profile</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Complete MACS ASR operations shelter development/test			2Q	
(U) Complete MACS PAR development/test			2Q	
(U) MACS MS C			3Q	
(U) Begin crew/maintenance personnel training				4Q
(U) Begin TTLS system evaluation	1Q			
(U) Complete TTLS system evaluation			4Q	
(U) Begin ATCALs Transformation development			2Q	
(U) Begin FAA NOTAMs upgrade development		3Q		