#### PE NUMBER: 0305114F PE TITLE: Air Traffic Control/Approach/Landing System (ATCALS)

Exhil	Exhibit R-2, RDT&E Budget Item Justification													
BUDGET ACTIVITY 07 Operational System Development				PE NUMBER AND 0305114F Air		ol/Approach/	Landing Sys	tem (ATCALS						
Cost (\$ in Millions)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total					
Total Program Element (PE) Cost	9.141	10.421	7.371	5.221	5.314	5.418	5.488	Continuing	TBD					
3587 Air Traffic Control Systems	9.141	10.421	7.371	5.221	5.314	5.418	5.488	Continuing	TBD					

## (U) <u>A. Mission Description and Budget Item Justification</u>

This project funds research and 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. This project also funds the advance of Air Force Terminal Instrument Procedures - Replacement (AFTERPS-R), which provides automated development of terminal flight instrument procedures. These procedures are specifically designed to accurately and precisely measure critical information necessary for pilots to fly designated flight paths that safely avoid obstacles and other hazards during a final approach to landing. This project is also key to ensuring Air Force Air Traffic Systems work collaboratively to safely and efficiently provide ATC services within the National Airspace System (NAS) and in host nations overseas. For example, over the next 15 years, the FAA plans to implement new or improved capabilities into the NAS in an evolutionary manner.

FY 2004-2009 will concentrate on deployment of the next generation of communications, navigation, and surveillance (CNS) technologies and the automation upgrades necessary to accommodate them. FY 2010-2015 will see additional capabilities being added 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. This effort complements similar activities associated with other safety of flight and airspace access programs such as Global Air Traffic Management that predominantly focus on aircraft issues. This program is in budget activity 7, Operational System Development, because it upgrades currently fielded systems.

### (U) <u>B. Program Change Summary (\$ in Millions)</u>

		<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
(U)	Previous President's Budget	9.865	10.622	5.886
(U)	Current PBR/President's Budget	9.141	10.421	7.371
(U)	Total Adjustments	-0.724	-0.201	
(U)	Congressional Program Reductions	-0.050	-0.110	
	Congressional Rescissions	-0.104	-0.091	
	Congressional Increases			
	Reprogrammings	-0.183		
	SBIR/STTR Transfer	-0.387		
(U)	Significant Program Changes:			
	\$1.485M was transferred to complete MACS development.			
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R-1 Shopping List - Item No. 179-2 of 179-8

	Ex	DATE	DATE February 2004							
	T ACTIVITY erational System Development				PE NUMBER AND 0305114F Air Control/Appro ATCALS)	Traffic			IBER AND TITLE Iffic Control S	ystems
	Cost (\$ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total
	Cost (\$ III WIIIIOIIS)	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
3587	Air Traffic Control Systems	9.141	10.421	7.371	5.221	5.314	5.418	5.488	8 Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	(		
(U) A	A. Mission Description and Budget Ite	m Justification								

# This project funds research and 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. This project also funds the advance of Air Force Terminal Instrument Procedures - Replacement (AFTERPS-R), which provides automated development of terminal flight instrument procedures. These procedures are specifically designed to accurately and precisely measure critical information necessary for pilots to fly designated flight paths that safely avoid obstacles and other hazards during a final approach to landing. This project is also key to ensuring Air Force Air Traffic Systems work collaboratively to safely and efficiently provide ATC services within the National Airspace System (NAS) and in host nations overseas. For example, over the next 15 years, the FAA plans to implement new or improved capabilities into the NAS in an evolutionary

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FY 2004-2009 will concentrate on deployment of the next generation of communications, navigation, and surveillance (CNS) technologies and the automation upgrades necessary to accommodate them. FY 2010-2015 will see additional capabilities being added 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. This effort complements similar activities associated with other safety of flight and airspace access programs such as Global Air Traffic Management that predominantly focus on aircraft issues. This program is in budget activity 7, Operational System Development, because it upgrades currently fielded systems.

(U) <b>B. Accomplishments/Planned Program (\$ in</b>	<u>Millions)</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
(U) Accomplishments/Planned Programs				
(U) Continue MACS Air Surveillance Radar (ASR)	and Ops Shelter Development	1.080		
(U) Complete MACS ASR and Ops Shelter Develop	oment		1.986	
(U) Continue MACS Precision Approach Radar (PA	AR) development	4.869		
(U) Complete MACS PAR development			5.546	
(U) Complete AFTERPS-R Release C Study			0.410	
(U) Continue support for all ATCALS projects		3.192	2.479	1.500
(U) Begin ATCALS pre-planned product improvem	ent (P3I)			5.871
(U) Total Cost		9.141	10.421	7.371
Project 3587	R-1 Shopping List - Item No. 179-3 of 179-8		Exhibit R-2a	a (PE 0305114F)
	1672			

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Exhibit R-2a, RDT&	E Project Justification	DATE February 2004
UDGET ACTIVITY 7 Operational System Development	PE NUMBER AND TITLE 0305114F Air Traffic Control/Approach/Landing System (ATCALS)	PROJECT NUMBER AND TITLE 3587 Air Traffic Control Systems
J) <u>C. Other Program Funding Summary (\$ in Millions)</u>		
U) <u>D. Acquisition Strategy</u> Award multiple, competitive contract vehicles. Emphasize off-th	ne-shelf technology, and maximize use of non-developmental item	s (NDIs).
Project 3587	R-1 Shopping List - Item No. 179-4 of 179-8	Exhibit R-2a (PE 0305114

Ex	chibit R-3, RD	T&E Project Cost	Analysis	5			DATE Februa	rv 200	4		
BUDGET ACTIVITY 07 Operational System Development			0305114	R AND TITLE F Air Traffic Approach/Lanc S)		February 2004 JECT NUMBER AND TITLE 7 Air Traffic Control Systems					
<ul> <li>(U) <u>Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)</li> <li>(U) <u>Product Development</u></li> </ul>	<u>Contract Method</u> <u>&amp; Type</u>	Performing Activity & Location	<u>Total</u> Prior to FY 2003 Cost	FYFY20032003CostAwardDate	FYFY20042004CostAwardDate	<u>FY</u> 2005 <u>Cost</u> 4	FYCost to2005CompleteAwardDate		Target Value of Contract		
AFTERPS-R		MacDonald Dettwiler; Vancouver, BC	2.450		0.410 Dec-03		0.000	2.860			
MACS Airport Surveillace Radar (ASR) and Operational Shelter Development Engineering Support	C/FFP	ITT Gilfillan; Van Nuys, CA Mitre Corp; Bedford,	29.823 1.407	0.537 Nov-03 1.150 Oct-02	1.264 Nov-03 1.272 Oct-03	1.000 C	Continuing Oct-04 Continuing	TBD TBD			
Various MACS Precision Approach Radar (PAR)	Multiple C/FFP	MA Multiple ITT Gilfillan; Van	2.765	0.238 Mar-03 2.427 Dec-02	0.350 Mar-04 3.546 Feb-04		Continuing	TBD TBD			
Development ATCALS P3I Subtotal Product Development Remarks:		Nuys, CA TBD	36.445	4.352	6.842	3.771 J 4.771	Ũ	3.771 TBD	0.000		
(U) <u>Support</u> Various Subtotal Support Remarks:	C/FFP/T&M	Multiple	0.523 0.523	1.682 May-03 1.682	1.718 May-04 1.718	1.500 M 1.500	Iay-05 Continuing Continuing	TBD TBD	0.000		
(U) <u>Test &amp; Evaluation</u> Test & Evaluation for MACS & AFTERPS-R	MIPR	46th Test Wing, Eglin AFB FL	0.787	1.510 Dec-02	0.761 Feb-04		Continuing	TBD			
Subtotal Test & Evaluation Remarks: (U) <u>Management</u>			0.787	1.510	0.761	0.000	Continuing	TBD	0.000		
Cost Estimating Support	C/T&M	MCR Federal Inc; MacLean, VA	0.550	0.082 May-03	0.100 May-04	0.100 N	1ay-05 Continuing	TBD			
Program Management Support Subtotal Management Remarks:	C/T&M	ACS Inc; Bedford, MA	0.000 0.550	1.515 May-03 1.597	1.000 May-04 1.100	1.000 M 1.100	1ay-05 Continuing Continuing	TBD TBD	0.000		
Project 3587		R-1 Shopping List -	Item No. 179-5	of 179-8			Exhibit R-	3 (PE 030	0511 <u>4F)</u>		

Exhibit R-	DATE February 2004							
BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0305114F Air Traffic Control/Approach/Land (ATCALS)	0305114F Air Traffic 3587 Control/Approach/Landing System						
(U) Total Cost	38.305 9.141	10.421	7.371	Continuing	TBD 0.	.000		
Project 3587	R-1 Shopping List - Item No. 179-6 of 179-8			Exhibit R-3	3 (PE 0305114	4F)		

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BUDGET ACTIVITY 7 Operational System Development											03 Co	805 <sup>.</sup> ont	MBE 114F rol/A ALS	₹ Ai \pp	r Tr	affic		ling	Sys	ster	n				T NUMBER AND TITLE ir Traffic Control Systems						
Fiscal Year	_	FY02	_		FY				FY				FY				FY				FY		- 3		FY		() ()	_	FY		
MACS ASD/One & DAD	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	1	2	3	4
MACS ASR/Ops & PAR Mileston e III	- 23		8 8	-	3	3	23-	<u></u>	2	-	8 - 3	÷ i	2-2	2	1		-3	-28	- 21			- 2	-12	32-3	s	8	8	8-1	8		-
ASR/Ops Development Contract Awarded Oct 2000					32		2	12						Δ	1						- 35	- 35	-35								
PAR Development Contract Awarded Jan 2002				. KG				î.					L	Δ									- 22								
Exercise ASR/Ops Production Option																	Δ														
Exercise PAR Production Option		_			2-	<u></u>					_	-					Δ					2		-							
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Major Event or Planne Ongoin Completed Ev Planned Task	ed O g Ac ent	ngoin	g Ac			ete																									_
Project 3587						R·	-1 Sh	ioppi	ing Lis				179-7	of 1	79-8												Exhil	oit R-	4 (PE	E 030	)5114F)

Exhibit R-4a, RDT&E	DATE Febru	February 2004				
BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0305114F Air Traffic Control/Approach/Landing System (ATCALS)	PROJECT NUMBER AND T 3587 Air Traffic Contr				
(U) <u>Schedule Profile</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>			
(U) Complete development of AFTERPS-R	1Q					
(U) Complete MACS ASR operations shelter development			3Q			
(U) Complete MACS PAR development		3Q				
(U) Begin ATCALS P3I			4Q			
(U) ASR/OPS operational testing	2Q					
(U) PAR operational testing	3Q					
(U) ATCALS P3I contract award		2Q				