

UNCLASSIFIED

PE NUMBER: 0305114F

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

Exhibit R-2, RDT&E Budget Item Justification

DATE

May 2009

BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

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

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	6.395	10.796	9.006	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
3587 Air Traffic Control Systems	6.395	10.796	9.006	0.000	0.000	0.000	0.000	0.000	Continuing	TBD

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

This program element funds research, development, and management of new air traffic control surveillance, positioning, and precision approach capabilities. The cornerstone of this effort is the Air Traffic Control and Landing Systems (ATCALS) Modernization initiative which combines organizational realignments, process improvements, and investments in technology to update 20+ year old fixed and deployable ATCALS equipment. The first phase of this initiative includes development of a deployable Instrument Landing System (DILS) 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.

The Air Force will be participating with the Federal Aviation Administration (FAA) and other assigned Departments to implement a new and improved capability into the NAS under the Next Generation (NextGen) Air Transportation System initiative. NextGen is a joint effort with the Department of Transportation (DOT), Department of Homeland Security (DHS), Department of Commerce (DOC) and the National Aeronautics and Space Administration (NASA). Near term efforts include initiatives to improve current air traffic and surveillance service, technology identification, operational risk awareness, and movement and access of airspace in both terminal and enroute environments. Additionally, in order to rapidly transition promising ATC technologies, the program element funds design studies, engineering analysis, non-recurring engineering and other efforts associated with integration and modification of ATC related technologies and systems. 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.

FY10 funding focuses on implementation of ATCALS Modernization, NextGen near term capabilities, and preparation of requirements and acquisition documents for a deployable RAPCON replacement. ATCALS Modernization includes continuation of DILS development to replace the manpower, maintenance, and airlift intensive mobile precision approach radar. NextGen will focus on technology and infrastructure changes required for the Air Force to be interoperable with FAA and host-nation ATC systems. One component is development of an Automatic Dependent Surveillance-Broadcast (ADS-B) capability which will provide enhanced pilot situational awareness and is being mandated by the FAA and Euro Control. 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).

This program is in budget activity 7, Operational System Development, because it upgrades currently fielded systems and has associated (OPAF) funding in PE 0305114F.

Exhibit R-2, RDT&E Budget Item Justification

DATE

May 2009

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 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) Previous President's Budget	8.293	6.867	3.585
(U) Current PBR/President's Budget	6.395	10.796	9.006
(U) Total Adjustments	-1.898	3.929	
(U) Congressional Program Reductions		-0.042	
Congressional Rescissions		-0.029	
Congressional Increases		4.000	
Reprogrammings	-1.667		
SBIR/STTR Transfer	-0.231		

(U) **Significant Program Changes:**

FY08: Reprogrammed to higher AF priorities.

FY09 Congressional add HR2638 24 Sep 08: \$4M for Transportable Transponder Landing System (TTLS).

FY10 funds programmed for Next Generation (NextGen) Air Transportation system development.

FY10 funds programmed for Automatic Dependence Surveillance - Broadcast (ADS-B) development.

Exhibit R-2a, RDT&E Project Justification								DATE May 2009		
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 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
3587 Air Traffic Control Systems	6.395	10.796	9.006	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 This program element funds research, development, and management of new air traffic control surveillance, positioning, and precision approach capabilities. The cornerstone of this effort is the Air Traffic Control and Landing Systems (ATCALS) Modernization initiative which combines organizational realignments, process improvements, and investments in technology to update 20+ year old fixed and deployable ATCALS equipment. The first phase of this initiative includes development of a deployable Instrument Landing System (DILS) 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. The Air Force will be participating with the Federal Aviation Administration (FAA) and other assigned Departments to implement a new and improved capability into the NAS under the Next Generation (NextGen) Air Transportation System initiative. NextGen is a joint effort with the Department of Transportation (DOT), Department of Homeland Security (DHS), Department of Commerce (DOC) and the National Aeronautics and Space Administration (NASA). Near term efforts include initiatives to improve current air traffic and surveillance service, technology identification, operational risk awareness, and movement and access of airspace in both terminal and enroute environments. Additionally, in order to rapidly transition promising ATC technologies, the program element funds design studies, engineering analysis, non-recurring engineering and other efforts associated with integration and modification of ATC related technologies and systems. 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. FY10 funding focuses on implementation of ATCALS Modernization, NextGen near term capabilities, and preparation of requirements and acquisition documents for a deployable RAPCON replacement. ATCALS Modernization includes continuation of DILS development to replace the manpower, maintenance, and airlift intensive mobile precision approach radar. NextGen will focus on technology and infrastructure changes required for the Air Force to be interoperable with FAA and host-nation ATC systems. One component is development of an Automatic Dependent Surveillance-Broadcast (ADS-B) capability which will provide enhanced pilot situational awareness and is being mandated by the FAA and Euro Control. 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). This program is in budget activity 7, Operational System Development, because it upgrades currently fielded systems and has associated (OPAF) funding in PE 0305114F.										

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Exhibit R-2a, RDT&E Project Justification								DATE				
								May 2009				
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT NUMBER AND TITLE				
07 Operational System Development					0305114F Air Traffic Control/Approach/Landing System (ATCALS)			3587 Air Traffic Control Systems				
(U) B. Accomplishments/Planned Program (\$ in Millions)					FY 2008			FY 2009		FY 2010		
(U) Next Generation Air Transportation System (NextGen)										2.000		
(U) Terminal Surveillance and Approach System (TSAS) /Transportable Transponder Landing System (TTLS)					2.899			4.000				
(U) TRACON Quick Connect Panel and Switchgear					0.695							
(U) Requirements & acquisition documentation for deployable RAPCON replacement system					0.432			0.366		1.311		
(U) ATCALS Modernization - DILS					2.369			6.430		5.445		
(U) Automatic Dependent Surveillance - Broadcast (ADS-B)										0.250		
(U) Total Cost					6.395			10.796		9.006		
(U) C. Other Program Funding Summary (\$ in Millions)												
					FY 2008		FY 2009		FY 2010		FY 2011	
					Actual		Estimate		Estimate		Estimate	
(U) AF RDT&E												
(U) Other APPN												
(U) OPAF - BA 5 (PE 35114F)												
Weapon System Code					31.781				Continuing		TBD	
CO2900												
(U) OPAF - BA 3 (PE 0305114F)					7.730		10.561		22.591		79.043	
Weapon System Code 833010											87.659	
(U) OPAF, BA 3, PE 0305114F),					3.214		3.927		7.987		8.626	
Weapon System Code 838010											9.613	
(U) OPAF, BA 3, (PE 0305137F,					62.607		47.049		47.670		42.191	
Weapon System Code 833020											48.412	
(U) OPAF, BA 5, (PE 0305137F)					5.461		5.488		5.734		5.786	
Weapon System Code											5.885	
86190A Initial Spares											5.988	
(U) OPAF - BA 5 (PE 0305114F)					0.876		0.884		0.906		0.917	
Weapon System Code											0.931	
86190A Initial Spares											0.948	
(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-2a (PE 0305114F)

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Exhibit R-3, RDT&E Project Cost Analysis											DATE May 2009		
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				
(U) Cost Categories (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	Contract Method & Type	Performing Activity & Location	Total Prior to FY 2008 Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
(U) Product Development Next Generation Air Transportation System (NextGen)	C/T&M	AFMC 641 ELSS, Hanscom AFB MA (PASS - Quantech Services, Bedford, MA; ETASS - Jacobs Engineering, Bedford, MA)						2.000	Jan-10		2.000		
											0.000		
Terminal Surveillance and Approach System (TSAS) /Tactical Transponder Landing System (TTLS)	C/FFP	Adv Nav & Positioning Corp; Hood River, OR	3.824	2.899	Jun-08	4.000	Jun-09			0.000	10.723	6.899	
											0.000		
TRACON Quick Connect Panel and Swtichgear	ID/IQ	Wells Global, Raleigh Durham, NC		0.695	Aug-08					0.000	0.695	0.695	
											0.000		
Requirements & acquisition documentation for deployable RAPCON replacement system	C/T&M	AFMC 641 ELSS, Hanscom AFB MA (PASS - Quantech Services, Bedford, MA; ETASS - Jacobs Engineering, Bedford, MA)		0.432	Mar-08	0.366	Feb-09	1.311	Jan-10	Continuing	TBD	TBD	
											0.000		
ATCALs Modernization - DILS	TBD	TBD		2.369	Mar-09	6.430	Aug-09	5.445	Dec-09	0.000	14.244	TBD	
											0.000		
Automatic Dependent Surveillance - Broadcast	TBD	TBD						0.250	Jan-10	Continuing	TBD	TBD	
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Exhibit R-3 (PE 0305114F)

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Exhibit R-3, RDT&E Project Cost Analysis

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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

(ADS-B)

Subtotal Product Development

3.824

6.395

10.796

9.006

Continuing

TBD

TBD

Remarks:

(U) Total Cost

3.824

6.395

10.796

9.006

Continuing

TBD

TBD

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Exhibit R-3 (PE 0305114F)

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Exhibit R-4, RDT&E Schedule Profile

DATE

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BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

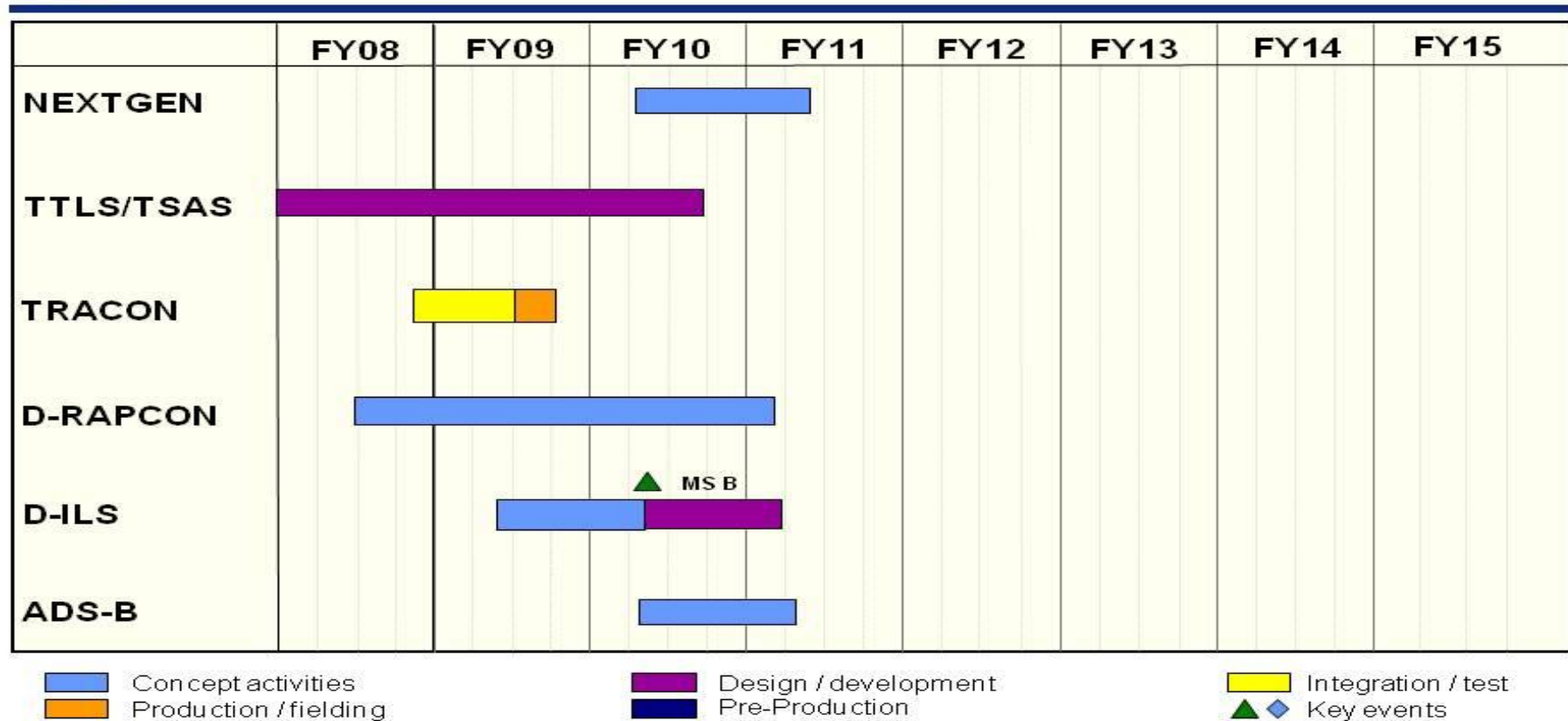
0305114F Air Traffic
Control/Approach/Landing System
(ATCALS)

PROJECT NUMBER AND TITLE

3587 Air Traffic Control Systems



Air Traffic Control Systems



PB10 R-Docs

Depicted by installation/production flow

1

Exhibit R-4a, RDT&E Schedule Detail

DATE

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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

(U) Schedule ProfileFY 2008FY 2009FY 2010

(U) Next Generation Air Transportation System (NextGen) concept activities

2-4Q

(U) Terminal Surveillance and Approach System (TSAS) /Tactical Transponder Landing System
(TTLS) integration/test

1-4Q

1-4Q

1-3Q

(U) TRACON Quick Connect Power and Switchgear Acquisition/Installation

4Q

1-3Q

(U) Develop deployable RAPCON requirements & acquisition documentation, production contract
award

2-4Q

1-4Q

1-4Q

(U) ATCALs Modernization - DILS Requirement Documentation Prep, Source Selection &
Development/Test

2-4Q

1-4Q

(U) Automatic Dependent Surveillance - Broadcast Development (ADS-B) concept activities

2-4Q