

UNCLASSIFIED

PE NUMBER: 0305182F
PE TITLE: Spacelift Range System

Exhibit R-2, RDT&E Budget Item Justification

DATE

February 2005

BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

0305182F Spacelift Range System

Cost (\$ in Millions)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost	58.944	49.314	48.854	37.513	26.738	12.257	9.964	10.020	Continuing	TBD
4137 Launch and Test Range System (LTRS) Modernization	58.944	49.314	48.854	37.513	26.738	12.257	9.964	10.020	Continuing	TBD

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

The Eastern Range (ER) at Patrick Air Force Base (AFB), FL, and the Western Range (WR) at Vandenberg AFB, CA, make up the Spacelift Range System (SLRS) . They provide tracking, telemetry, communications, flight analysis, and other capabilities necessary to safely conduct: national security, civil, and commercial spacelift operations; ballistic missile evaluations; and aeronautical and guided weapons tests. Many range assets are outdated, unreliable, inefficient, and costly to operate and maintain.

The AF is addressing range deficiencies through two modernization contracts. First, the Range Standardization and Automation (RSA) Phase IIA contract modernizes the control/display and communications segments at both ranges. Second, the SLRS Contract (SLRSC) modernizes instrumentation at both ranges. The SLRSC also provides overall systems engineering and architecture management, follow-on modernization of the control/display and communications segments to complete the SLRS architecture, and system level testing to complete the modernization effort. Subsequent to submission of the FY05 President's Budget Request, the Air Force restructured the RSA IIA contract and added funding in FY06 through FY08 to complete modernization of weather, communications (voice, video, data, and timing; network management system; and digital telemetry), planning and scheduling, and flight operations and analysis systems (to include activation of the Western Range Operations Control Center).

These upgrades to fielded systems are categorized as Budget Activity 7, Operational Systems Development.

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

	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Previous President's Budget	69.908	47.253	27.099	21.582
(U) Current PBR/President's Budget	58.944	49.314	48.854	37.513
(U) Total Adjustments	-10.964	2.061		
(U) Congressional Program Reductions		-0.439		
Congressional Rescissions				
Congressional Increases		2.500		
Reprogrammings	-9.964			
SBIR/STTR Transfer	-1.000			

(U) **Significant Program Changes:**

FY 2004: Reduced for higher priority efforts (\$9.964M)

FY 2005: Increased by Congress for two California Space Authority projects: Reservoir Assessment, Detection, & Response (\$1.500M); and, California Space Infrastructure Program (\$1.000M)

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FY 2006/FY2007: Increased to support restructured range modernization efforts		

Exhibit R-2a, RDT&E Project Justification

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BUDGET ACTIVITY 07 Operational System Development					PE NUMBER AND TITLE 0305182F Spacelift Range System			PROJECT NUMBER AND TITLE 4137 Launch and Test Range System (LTRS) Modernization		
Cost (\$ in Millions)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
4137 Launch and Test Range System (LTRS) Modernization	58.944	49.314	48.854	37.513	26.738	12.257	9.964	10.020	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

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

The Eastern Range (ER) at Patrick Air Force Base (AFB), FL, and the Western Range (WR) at Vandenberg AFB, CA, make up the Spacelift Range System (SLRS). They provide tracking, telemetry, communications, flight analysis, and other capabilities necessary to safely conduct: national security, civil, and commercial spacelift operations; ballistic missile evaluations; and aeronautical and guided weapons tests. Many range assets are outdated, unreliable, inefficient, and costly to operate and maintain.

The AF is addressing range deficiencies through two modernization contracts. First, the Range Standardization and Automation (RSA) Phase IIA contract modernizes the control/display and communications segments at both ranges. Second, the SLRS Contract (SLRSC) modernizes instrumentation at both ranges. The SLRSC also provides overall systems engineering and architecture management, follow-on modernization of the control/display and communications segments to complete the SLRS architecture, and system level testing to complete the modernization effort. Subsequent to submission of the FY05 President's Budget Request, the Air Force restructured the RSA IIA contract and added funding in FY06 through FY08 to complete modernization of weather, communications (voice, video, data, and timing; network management system; and digital telemetry), planning and scheduling, and flight operations and analysis systems (to include activation of the Western Range Operations Control Center).

These upgrades to fielded systems are categorized as Budget Activity 7, Operational Systems Development.

(U) **B. Accomplishments/Planned Program (\$ in Millions)**

	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Continue RSA Phase IIA. Continue development, test, and evaluation of RSA Phase IIA systems, including planning and scheduling, communications (voice, video, data, and timing; network management system; and digital telemetry), weather, and flight operations and analysis (to include activation of WR Operations Control Center). Develop upgrades needed to evolve and deliver operational range capabilities. Perform product engineering, integration efforts, engineering studies, and related tasks to support the architecture. This includes \$2.5M added by Congress in FY04 for RSA IIA.	29.458	21.339	22.972	14.144
(U) Continue SLRSC. Continue systems engineering technical effort including architecture management, requirement management, systems integration, and engineering analyses. Develop specifications for SLRS systems. Integrate modernized instrumentation systems with legacy systems as well as systems developed by RSA Phase IIA. Develop, test, and evaluate: instrumentation to include command destruct, telemetry, and radars; and interfaces to establish the SLRS automated architecture and enable centralized and local control of instrumentation, to include activation of the WR Operations Control Center.	20.867	22.541	23.756	21.313
(U) Provide program support for Systems Program Office (SPO).	3.803	2.934	2.126	2.056
(U) Partner with California Space Authority (CSA) to conduct California Space Infrastructure projects using	4.816	2.500		

Exhibit R-2a, RDT&E Project Justification

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4137 Launch and Test Range System
(LTRS) Modernization

funds added by Congress. FY04 projects are: Very Small Aperture Terminal Water Supply Monitoring; and Quakefinder II Earthquake Detection Demonstration. FY05 projects are: Reservoir Assessment, Detection, & Response; and, California Space Infrastructure Program.

(U) Total Cost 58.944 49.314 48.854 37.513

(U) **C. Other Program Funding Summary (\$ in Millions)**

	<u>FY 2004</u> <u>Actual</u>	<u>FY 2005</u> <u>Estimate</u>	<u>FY 2006</u> <u>Estimate</u>	<u>FY 2007</u> <u>Estimate</u>	<u>FY 2008</u> <u>Estimate</u>	<u>FY 2009</u> <u>Estimate</u>	<u>FY 2010</u> <u>Estimate</u>	<u>FY 2011</u> <u>Estimate</u>	<u>Cost to</u> <u>Complete</u>	<u>Total Cost</u>
(U) OPAF (PE 0305182F, Spacelift Range System Space P-65, BA 03)	82.239	104.051	114.189	121.863	142.534	103.588	105.608	107.110	Continuing	TBD
(U) OPAF (PE 0305182F, Initial Spares, P-103, BA 05)	0.696	1.397	2.761	2.806	2.893	2.953	2.996	3.045	Continuing	TBD

(U) **D. Acquisition Strategy**

The AF is using two competitively awarded, complementary contracts, managed by the Space and Missile Systems Center, to modernize the ranges on a minimal-interference basis, so the ranges can continue to operate in support of launches and tests.

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Exhibit R-3, RDT&E Project Cost Analysis												DATE February 2005		
BUDGET ACTIVITY 07 Operational System Development						PE NUMBER AND TITLE 0305182F Spacelift Range System						PROJECT NUMBER AND TITLE 4137 Launch and Test Range System (LTRS) Modernization		
(U) Cost Categories (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior to FY 2004 Cost</u>	<u>FY 2004 Cost</u>	<u>FY 2004 Award Date</u>	<u>FY 2005 Cost</u>	<u>FY 2005 Award Date</u>	<u>FY 2006 Cost</u>	<u>FY 2006 Award Date</u>	<u>FY 2007 Cost</u>	<u>FY 2007 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
(U) <u>Product Development</u> RSA Phase IIA	C/CPAF	Lockheed Martin, Santa Maria, CA	208.489	29.458	Nov-03	21.339	Nov-04	22.972	Nov-05	14.144	Nov-06	Continuing	TBD	TBD
SLRSC	C/CPAF	ITT Industries, Cape Canaveral, FL	78.995	20.867	Nov-03	22.541	Nov-04	23.756	Nov-05	21.313	Nov-06	Continuing	TBD	TBD
Subtotal Product Development Remarks:			287.484	50.325		43.880		46.728		35.457		Continuing	TBD	TBD
(U) <u>Support</u> SPO Program Support (FFRDC, SETA, SPO Ops)	Various	Various	24.818	3.803	Oct-03	2.934	Oct-04	2.126	Oct-05	2.056	Oct-06	Continuing	TBD	TBD
California Space Authority Studies/Projects	Various	Various	25.197	4.816	May-04	2.500	Apr-05					Continuing	TBD	TBD
Civil Reserve Space Service Initiative	Various	Various	0.925									0.000	0.925	TBD
Subtotal Support Remarks:			50.940	8.619		5.434		2.126		2.056		Continuing	TBD	TBD
(U) Total Cost			338.424	58.944		49.314		48.854		37.513		Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile

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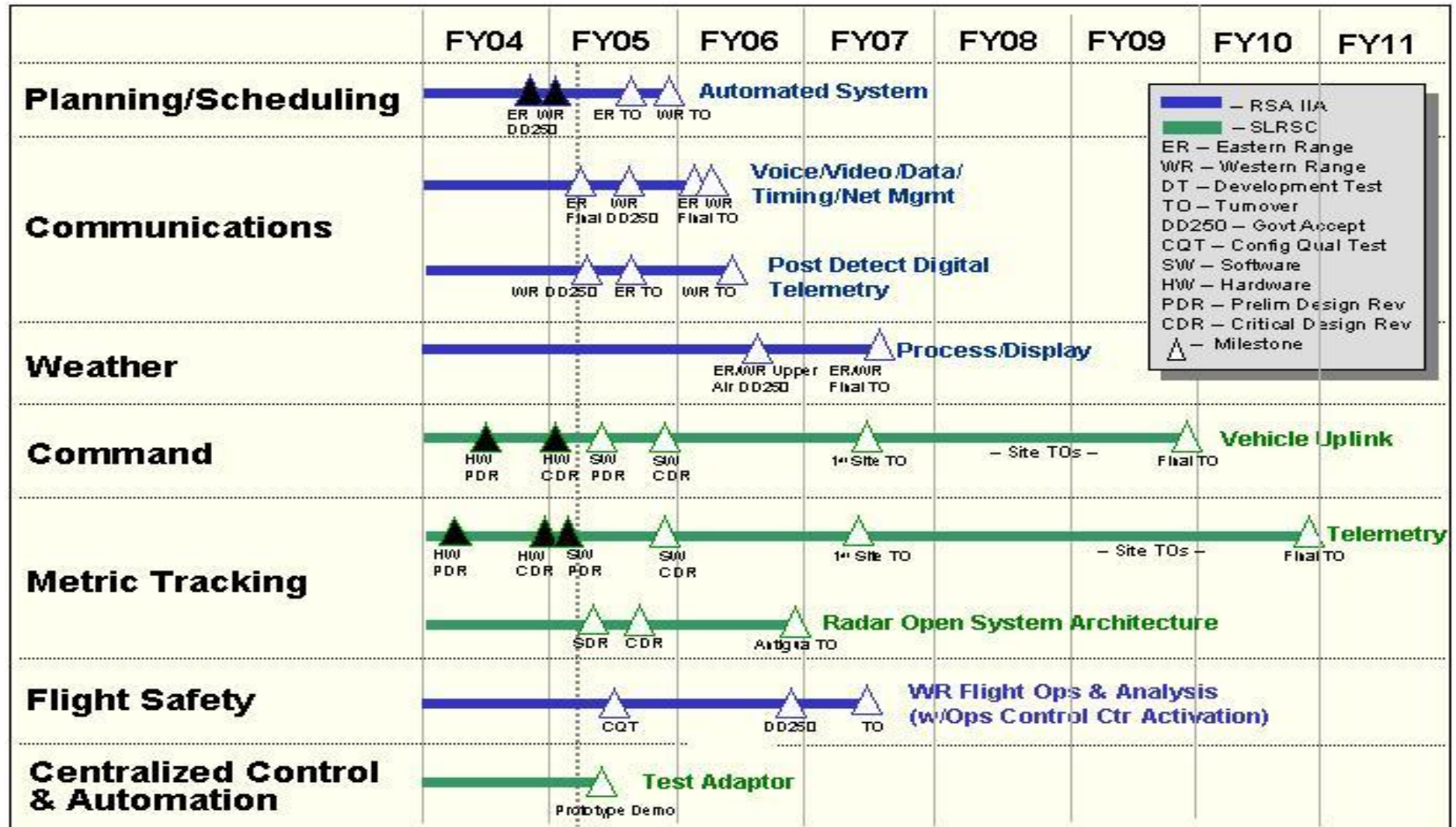
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Exhibit R-4a, RDT&E Schedule Detail		DATE February 2005		
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT NUMBER AND TITLE		
07 Operational System Development	0305182F Spacelift Range System	4137 Launch and Test Range System (LTRS) Modernization		
(U) <u>Schedule Profile</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) RSA Phase IIA				
(U) - Planning & Scheduling: ER/WR Operational Turnover		3-4Q		
(U) - Communications: ER Final Govt Acceptance		2Q		
(U) - Communications: ER Final Operational Turnover			1Q	
(U) - Communications: WR Final Govt Acceptance		3Q		
(U) - Communications: WR Final Operational Turnover			2Q	
(U) - Post Detect Digital Telemetry: ER Operational Turnover		3Q		
(U) - Post Detect Digital Telemetry: WR Operational Turnover			2Q	
(U) - Weather Final Govt Acceptance			3Q	
(U) - Weather Final Turnover				3Q
(U) - WR Flight Operations and Analysis Qualification Testing		3Q		
(U) - WR Flight Ops and Analysis Government Acceptance			4Q	
(U) - WR Flight Ops and Analysis Operational Turnover				2Q
(U) SLRS Contract				
(U) - Command Software Preliminary Design Review (PDR)		2Q		
(U) - Command Software Critical Design Review (CDR)		4Q		
(U) - Command 1st Site Operational Turnover				3Q
(U) - Telemetry Instrumentation Software PDR		1Q		
(U) - Telemetry Instrumentation Software CDR		4Q		
(U) - Telemetry 1st Site Operational Turnover				2Q
(U) - Radar 1st Site Operational Turnover			4Q	
(U) California Space Authority Studies/Projects				
(U) - Space-Based Water Supply Monitoring Contract Award		2Q		
(U) - Quakefinder II Earthquake Detection Demo Complete			1Q	
(U) - Reservoir Assessment, Detection, and Response Contract Award		4Q		
(U) - California Space Infrastructure Project Management Contract Award		3Q		