

**UNCLASSIFIED**

PE NUMBER: 0305182F  
 PE TITLE: Spacelift Range System

<b>Exhibit R-2, RDT&amp;E Budget Item Justification</b>	DATE <b>February 2004</b>
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<b>BUDGET ACTIVITY</b> <b>07 Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0305182F Spacelift Range System</b>
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	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	85.181	69.908	47.253	27.099	21.582	14.551	9.619	Continuing	TBD
4137	Launch and Test Range System (LTRS) Modernization	85.181	69.908	47.253	27.099	21.582	14.551	9.619	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, flight analysis, and other capabilities necessary to safely conduct: Department of Defense, 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 Many range assets are outdated, unreliable, inefficient, and costly to operate and maintain.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 Air Force is addressing range deficiencies through two modernization contracts. First, the Range Standardization and Automation (RSA) Phase IIA contract modernizes the control/display and communication 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 the FY04 President's Budget, the Air Force replanned the RSA IIA contract to complete modernization of weather, communications (voice, video, data, and timing; network management system; and digital telemetry), planning and scheduling, and flight safety systems.

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

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

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
(U) Previous President's Budget	85.538	63.210	50.777
(U) Current PBR/President's Budget	85.181	69.908	47.253
(U) Total Adjustments	-0.357	6.698	
(U) Congressional Program Reductions		-0.802	
Congressional Rescissions			
Congressional Increases		7.500	
Reprogrammings			
SBIR/STTR Transfer	-0.357		

**(U) Significant Program Changes:**

FY 2003: Increased by \$9.0M to adjust for program restructuring.

FY 2004: Increased (Congress) by \$7.5M: 1) \$2.5M for RSA IIA; 2) \$3.0M for water supply monitoring project; and 3) \$2.0M for earthquake monitoring demo.

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DATE

**February 2004**

BUDGET ACTIVITY

**07 Operational System Development**

PE NUMBER AND TITLE

**0305182F Spacelift Range System**

FY 2005: Reduced by \$3.4M to adjust for program restructuring.

**Exhibit R-2a, RDT&E Project Justification**

DATE  
**February 2004**

BUDGET ACTIVITY <b>07 Operational System Development</b>				PE NUMBER AND TITLE <b>0305182F Spacelift Range System</b>			PROJECT NUMBER AND TITLE <b>4137 Launch and Test Range System (LTRS) Modernization</b>		
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
4137 Launch and Test Range System (LTRS) Modernization	85.181	69.908	47.253	27.099	21.582	14.551	9.619	Continuing	TBD
Quantity of RDT&E Articles	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, flight analysis, and other capabilities necessary to safely conduct: Department of Defense, 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 Air Force is addressing range deficiencies through two modernization contracts. First, the Range Standardization and Automation (RSA) Phase IIA contract modernizes the control/display and communication 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 the FY04 President's Budget, the Air Force replanned the RSA IIA contract to complete modernization of weather, communications (voice, video, data, and timing; network management system; and digital telemetry), planning and scheduling, and flight safety systems.

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

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

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</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, flight safety, and differential GPS. 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.	34.053	32.751	12.071
(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.	32.946	28.380	31.948
(U) Provide program support for Systems Program Office (SPO), including \$3.5M added by Congress in FY03 for Eastern Range Core Crew (operational support to acquisition).	7.826	4.127	3.234
(U) Partner with California Space Authority (CSA) to conduct California Space Infrastructure projects using funds added	9.431	4.650	

**Exhibit R-2a, RDT&E Project Justification**

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BUDGET ACTIVITY <b>07 Operational System Development</b>	PE NUMBER AND TITLE <b>0305182F Spacelift Range System</b>	PROJECT NUMBER AND TITLE <b>4137 Launch and Test Range System (LTRS) Modernization</b>
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by Congress. FY03 projects are Range Technology Demonstration, Space Technology Initiative, and Space Homeland Security Demonstration. FY04 projects are Very Small Aperture Terminal Water Supply Monitoring and Quakefinder II demonstration.

(U) Conduct the Civil Reserve Space Service Initiative using funds added by Congress.	0.925		
(U) Total Cost	85.181	69.908	47.253

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

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</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) OPAF (PE 0305182F, Spacelift Range System Space P-73, BA 03)	106.389	80.037	101.458	93.936	82.868	123.483	101.692	Continuing	TBD
(U) OPAF (PE 0305182F, Initial Spares, P-111, BA 05)	1.996	0.696	1.402	2.742	2.752	2.835	2.881	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 non-interference basis, as they continue to operate in support of launches and tests.



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**Exhibit R-3, RDT&E Project Cost Analysis**

DATE

**February 2004**

BUDGET ACTIVITY			PE NUMBER AND TITLE					PROJECT NUMBER AND TITLE				
<b>07 Operational System Development</b>			<b>0305182F Spacelift Range System</b>					<b>4137 Launch and Test Range System (LTRS) Modernization</b>				
<u>(U) Cost Categories</u>	<u>Contract Method &amp; Type</u>	<u>Performing Activity &amp; Location</u>	<u>Total</u>	<u>FY</u>	<u>FY</u>	<u>FY</u>	<u>FY</u>	<u>FY</u>	<u>FY</u>	<u>Cost to</u>	<u>Total</u>	<u>Target</u>
(Tailor to WBS, or System/Item Requirements) (\$ in Millions)			<u>Prior to FY</u>	<u>2003</u>	<u>2003</u>	<u>2004</u>	<u>2004</u>	<u>2005</u>	<u>2005</u>	<u>Complete</u>	<u>Cost</u>	<u>Value of</u>
			<u>2003</u>	<u>Cost</u>	<u>Award</u>	<u>Cost</u>	<u>Award</u>	<u>Cost</u>	<u>Award</u>			<u>Contract</u>
			<u>Cost</u>		<u>Date</u>		<u>Date</u>		<u>Date</u>			
<u>(U) Product Development</u>												
RSA Phase IIA	C/CPAF	Lockheed Martin, Santa Maria, CA	173.332	34.053	Nov-02	32.751	Nov-03	12.071	Nov-04	Continuing	TBD	269.635
SLRSC	C/CPAF	ITT Industries, Cape Canaveral, FL	45.300	32.946	Nov-02	28.380	Nov-03	31.948	Nov-04	Continuing	TBD	200.690
Subtotal Product Development			218.632	66.999		61.131		44.019		Continuing	TBD	470.325
Remarks:												
<u>(U) Support</u>												
SPO Program Support (FFRDC, SETA, SPO Ops)	Various	Various	18.845	7.826	Jan-03	4.127	Oct-03	3.234	Oct-04	Continuing	TBD	TBD
California Space Authority Studies/Projects	Various	Various	15.766	9.431	May-03	4.650	Feb-04			0.000	29.847	TBD
Civil Reserve Space Service Initiative	Various	Various		0.925						0.000	0.925	TBD
Subtotal Support			34.611	18.182		8.777		3.234		Continuing	TBD	TBD
Remarks:												
<u>(U) Test &amp; Evaluation</u>												
N/A											0.000	
Subtotal Test & Evaluation			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
<u>(U) Management</u>												
N/A											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
<u>(U) Reprogrammed</u>												
Subtotal Reprogrammed			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
<u>(U) Total Cost</u>			253.243	85.181		69.908		47.253		Continuing	TBD	TBD

**Exhibit R-4, RDT&E Schedule Profile**

DATE

**February 2004**

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**

UNCLASSIFIED

Exhibit R-4a, RDT&E Schedule Detail		DATE
		<b>February 2004</b>
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT NUMBER AND TITLE
<b>07 Operational System Development</b>	<b>0305182F Spacelift Range System</b>	<b>4137 Launch and Test Range System (LTRS) Modernization</b>
	<u>FY 2003</u>	<u>FY 2004</u>
		<u>FY 2005</u>
(U) <b><u>Schedule Profile</u></b>		
(U) RSA Phase IIA		
(U) - Planning & Scheduling: ER/WR Operational Turnover		2-4Q
(U) - Communications: ER Voice/Video/Data/Timing Govt Acceptance		2Q
(U) - Communications: ER Voice/Video/Data/Timing Operational Turnover		4Q
(U) - Communications: WR Voice/Video/Data/Timing Govt Acceptance		2Q
(U) - Communications: ER Digital Telemetry Govt Acceptance	4Q	
(U) - Communications: ER Digital Telemetry Operational Turnover		1Q
(U) - Weather Govt Acceptance		4Q
(U) - Differential GPS Metric Tracking Govt Acceptance	4Q	
(U) - Flight Operations Version 1 (FOV1) Operational Turnover	4Q	
(U) - Flight Operations and Analysis Qualification Testing		4Q
(U) SLRS Contract		
(U) - Instrumentation System Design Review	4Q	
(U) - Command Preliminary Design Review (PDR)/Critical Design Review (CDR)		3-4Q
(U) - Telemetry Instrumentation PDR/CDR		2-4Q
(U) - Radar PDR/CDR		2-3Q
(U) California Space Authority Studies/Projects		
(U) - Space Integration Master Planning (Homeland Defense) - Final Report/Roadmap	3Q	
(U) - Range Technology Demonstration Complete/Final Report		4Q
(U) - Space Technology Initiative Complete/Final Report		4Q
(U) - Space Homeland Security Demo Complete/Final Report		3Q
(U) - Space-Based Water Supply Monitoring Project Complete		4Q
(U) - Quakefinder II Earthquake Detection Demo Complete		4Q