RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: February 2003

BUDGET ACTIVITY: 07 - Operational System Development

PE NUMBER AND TITLE: 0305182F Spacelift Range System

PROJECT: 4137

	COST ($ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4137	Launch and Test Range System (LTRS) Modernization	65,608	85,538	63,210	50,777	27,173	21,626	14,558	9,604	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

(U) A. Mission Description

The Eastern Range (ER) at Patrick AFB and Cape Canaveral AFS, FL, and the Western Range (WR) at Vandenberg AFB, CA, make up the Launch and Test Range System, also known as 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 Many range assets are outdated, unreliable, inefficient, and costly to operate and maintain.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 these range deficiencies through a two-part modernization program. First, the Range Standardization and Automation (RSA) Phase IIA contract completes modernization of selected portions of the control/display and communication segments at both ranges. Second, the SLRS Contract (SLRSC) continues to modernize the instrumentation segment 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. Beginning in FY04, the Air Force is descoping the RSA Phase IIA effort to support higher priorities and refocusing the SLRSC effort on sustainment and recapitalization with limited modernization.

(U) FY 2002 ($ in Thousands)

(U) $0 Accomplishments/Planned Program

(U) $28,072 Continued RSA Phase IIA. Continued development, test, and evaluation of RSA Phase IIA systems, to include: planning & scheduling, interim flight safety, weather, communications network (voice, video, data, core, net manager), differential GPS for metric tracking, final flight operations and analysis, and digital telemetry. Performed product engineering, integration efforts, engineering studies, and related tasks to support the architecture.

(U) $30,239 Continued SLRSC. Continued SLRSC systems engineering technical effort including architecture management, requirement management, systems integration, and engineering analyses. Conducted instrument modernization systems design review. Began development, testing, and evaluation of instrumentation systems to include: fixed and mobile telemetry, fixed and mobile command equipment, fixed and mobile optics instruments, radars, radio frequency monitoring equipment, weather equipment, and surveillance equipment. Developed, tested, and evaluated

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(U) A. Mission Description Continued

(U) FY 2002 ($ in Thousands) Continued

changes to flight safety, command and control, and communications subsystems, as well as associated interfaces, required to establish the SLRS automated architecture and to enable centralized and local control of instrumentation.

(U) $5,623 Provided program support for Systems Program Office (SPO).

(U) $1,674 In conjunction with California Space Authority (CSA), conducted space integration master planning to analyze future space requirements in support of homeland defense, with funds added by Congress.

(U) $65,608 Total

(U) FY 2003 ($ in Thousands)

(U) $0 Accomplishments/Planned Program

(U) $30,743 Continue RSA Phase IIA. Continue development, test, and evaluation of RSA Phase IIA systems, including weather, communications network (voice, video, data, core, net manager), flight operations and analysis, digital telemetry, planning and scheduling, and differential GPS. Perform product engineering, integration efforts, engineering studies, and related tasks to support the architecture.

(U) $37,763 Continue SLRSC. Continue SLRSC systems engineering technical effort including architecture management, requirement management, systems integration, and engineering analyses. Develop, test, and evaluate instrumentation systems such as: fixed and mobile telemetry, fixed and mobile command equipment, radars, weather equipment, and surveillance equipment. Integrate modernized instrumentation systems with legacy range systems as well as systems developed by RSA Phase IIA. Develop, test, and evaluate changes to flight safety, command and control, and communications subsystems, as well as associated interfaces, required to establish the SLRS automated architecture and to enable centralized and local control of instrumentation.

(U) $6,676 Provide program support for Systems Program Office (SPO), including $3.5M added by Congress for Eastern Range Core Crew (operational support to acquisition).

(U) $9,431 Partner with CSA to conduct Range Technology Demonstration, Space Technology Initiative, and Space Homeland Security Demonstrations, using funds added by Congress.

(U) $925 Conduct the Civil Reserve Space Service Initiative using funds added by Congress.

(U) $85,538 Total

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(U) A. Mission Description Continued

(U) FY 2004 ($ in Thousands)

(U)	$0	Accomplishments/Planned Program
(U)	$24,896	Begin descoping/phasing out RSA Phase IIA. Complete or curtail development, test, and evaluation of RSA Phase IIA systems, including weather, communications network (voice, video, data, core, net manager), flight safety, and digital telemetry. Develop upgrades needed to evolve and deliver operational Range capabilities. Perform product engineering, integration efforts, engineering studies, and related tasks to support the architecture.
(U)	$35,407	Continue SLRSC. Continue systems engineering technical effort including architecture management, requirement management, systems integration, and engineering analyses. Develop specifications for instrumentation systems such as: fixed and mobile telemetry, fixed and mobile command equipment, radars, weather equipment, and surveillance equipment. Integrate modernized instrumentation systems with legacy systems as well as systems developed by RSA Phase IIA. Develop, test, and evaluate instrumentation to include: radars, telemetry, and command; telemetry communications subsystems; and interfaces to establish the SLRS automated architecture and enable centralized and local control of instrumentation.
(U)	$2,907	Provide program support for Systems Program Office (SPO).
(U)	$63,210	Total

(U) B. Budget Activity Justification

These efforts are categorized as Budget Activity 7, Operational Systems Development, since they upgrade fielded systems.

(U) C. Program Change Summary ($ in Thousands)

		FY 2002	FY 2003	FY 2004	Total Cost
(U)	Previous President's Budget	70,113	82,108	106,251	TBD
(U)	Appropriated Value	70,897	96,808		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions	-1,110	-1,755		
	b. Small Business Innovative Research	-4,179			
	c. Omnibus or Other Above Threshold Reprogram		-515		
	d. Below Threshold Reprogram				
	e. Rescissions				
(U)	Adjustments to Budget Years Since FY 2003 PBR		-9,000	-43,041	
(U)	Current Budget Submit/FY 2004 PBR	65,608	85,538	63,210	TBD

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(U) C. Program Change Summary ($ in Thousands) Continued

(U) Significant Program Changes:

FY 2003: Increased funding (Congress) by $14.7M: 1) $3.5M for Eastern Range Core Crew; 2) $3.4M for Range Technology Demonstration; 3) $4.0M for Space Technology; 4) $2.8M for Space Homeland Security; and, 5) $1.0M for Civil Reserve Space Service Initiative.

FY 2003: Decreased funding by $9.0M to adjust for program restructuring in FY 2004-2009.

FY 2004: Decreased funding by $43.2M, descoping range standarization and automation in favor of increased sustainment and recapitalization efforts.

(U) D. Other Program Funding Summary ($ in Thousands)

		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
(U)	OPAF (PE 0305182F, Spacelift Range System Space P-65, BA 03)	128,414	102,405	80,635	106,791	94,186	82,834	122,971	100,925	Continuing	TBD
(U)	OPAF (PE 0305182F, Initial Spares, P-106, BA 05)	682	1,996	701	1,409	2,749	2,751	2,823	2,859	Continuing	TBD

(U) E. Acquisition Strategy

The AF is using two competitively awarded contracts to modernize the ranges. The RSA Phase IIA contract (FY 1996 to FY 2005) is modernizing the communications and control/display segments at both ranges. The SLRS Contract (FY 2001 to FY 2010) is modernizing the instrumentation segment at both ranges and consolidating systems integration and sustainment efforts. The Air Force is descoping the RSA Phase IIA effort and refocusing the SLRSC on sustainment and recapitalization with limited modernization.

(U) F. Schedule Profile

		FY 2002				FY 2003				FY 2004			
		1	2	3	4	1	2	3	4	1	2	3	4
(U)	RSA Phase IIA												
(U)	- Planning & Scheduling												
(U)	-- OT&E									X			
(U)	-- Operational Turnover										X		
(U)	- Weather												
(U)	-- First Increment Govt Acceptance				*								

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(U) F. Schedule Profile Continued

		FY 2002				FY 2003				FY 2004			
		1	2	3	4	1	2	3	4	1	2	3	4
(U)	-- Second Increment Govt Acceptance						X						
(U)	-- WR Operational Turnover								X				
(U)	-- ER Dispersion Assessment System Govt Acceptance										X		
(U)	-- Upgrades for Upper Air Data												X
(U)	- Flight Operations Version 1 (FOV1)												
(U)	-- Operational Turnover						X						
(U)	- Communications												
(U)	-- WR Initial Increment Govt Acceptance					*							
(U)	-- ER Final Increment Govt Acceptance								X				
(U)	-- WR Final Increment Govt Acceptance									X			
(U)	- Differential GPS Metric Tracking												
(U)	-- Govt Acceptance						X						
(U)	- Flight Operations and Analysis												
(U)	-- Design Release			*									
(U)	-- Qualification Testing							X					
(U)	- Digital Telemetry												
(U)	-- 2nd Increment Contract Award		*										
(U)	-- Post-Detect Telemetry Design Release		*										
(U)	-- Post-Detect Telemetry Govt Acceptance (ER)						X						
(U)	-- Post-Detect Telemetry Operational Turnover (ER)								X				
(U)	-- Post-Detect Telemetry Govt Acceptance (WR)											X	
(U)	SLRS Contract												
(U)	- System Design Review							X					
(U)	- Telemetry & Command Instrumentation Preliminary Design Review (PDR)							X					
(U)	- Start Weather, Command, & Telemetry Instrumentation Design		*										
(U)	- Radar Preliminary Design Review								X				

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(U) F. Schedule Profile Continued

		FY 2002				FY 2003				FY 2004			
		1	2	3	4	1	2	3	4	1	2	3	4
(U)	- Radar Critical Design Review												X
(U)	- Telemetry Critical Design Review									X			
(U)	- Command Critical Design Review									X			
(U)	California Space Authority Studies/Projects												
(U)	- Space Integration Master Planning in Support of Homeland Defense												
(U)	-- Contract Award		*										
(U)	-- Final Report/Roadmap							X					
(U)	- Range Technology Demonstration												
(U)	-- Contract Award						X						
(U)	-- Demo Complete/Final Report												X
(U)	- Space Technology Initiative												
(U)	-- Contract Award						X						
(U)	-- Initiative Complete/Final Report												X
(U)	- Space Homeland Security Demonstration												
(U)	-- Contract Award						X						
(U)	-- Demo Complete/Final Report											X	

* = completed event; X = planned event

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: February 2003

BUDGET ACTIVITY: 07 - Operational System Development

PE NUMBER AND TITLE: 0305182F Spacelift Range System

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(U) A. Project Cost Breakdown ($ in Thousands)

		FY 2002	FY 2003	FY 2004
(U)	RSA Phase IIA Contract	28,072	30,743	24,896
(U)	SLRS Contract	30,239	37,763	35,407
(U)	Program Support	5,623	6,676	2,907
(U)	California Space Authority Studies/Projects	1,674	9,431	
(U)	Civil Reserve Space Service Initiative		925	
(U)	Total	65,608	85,538	63,210

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

(U) Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 2002	Budget FY 2002	Budget FY 2003	Budget FY 2004	Budget to Complete	Total Program
Product Development Organizations										
Lockheed Martin (RSA Phase IIA)	C/CPAF	Nov 95	411,956	411,956	145,260	28,072	30,743	24,896	Continuing	TBD
ITT Industries (SLRSC)	C/CPAF	Nov 00	293,692	293,692	15,061	30,239	37,763	35,407	Continuing	TBD
Support and Management Organizations										
SPO Program Support (FFRDC, SETA, SPO Ops)	Various	Various	N/A	N/A	18,845	5,623	6,676	2,907	Continuing	TBD
California SpaceAuthority Studies/Projects	Various	Various	N/A	N/A	15,766	1,674	9,431			26,871
Civil Reserve Space Service Initiative							925			925
Test and Evaluation Organizations										
N/A										

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BUDGET ACTIVITY: 07 - Operational System Development	PE NUMBER AND TITLE: 0305182F Spacelift Range System — PROJECT: 4137

(U) Government Furnished Property:

Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 2002	Budget FY 2002	Budget FY 2003	Budget FY 2004	Budget to Complete	Total Program
Product Development Property									
GFP determination is ongoing as work progresses on each delivery increment. The current 1000+ item GFP list is too large to be included with this document but is available upon request from the SPO.									
Support and Management Property									
N/A									
Test and Evaluation Property									
N/A									

Subtotals	Total Prior to FY 2002	Budget FY 2002	Budget FY 2003	Budget FY 2004	Budget to Complete	Total Program
Subtotal Product Development	160,321	58,311	68,506	60,303	TBD	TBD
Subtotal Support and Management	34,611	7,297	17,032	2,907	TBD	TBD
Subtotal Test and Evaluation						
Total Project	194,932	65,608	85,538	63,210	TBD	TBD