

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305182F Spacelift Range System				PROJECT 4137		
COST (\$ in Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4137	Launch and Test Range System (LTRS) Modernization	57,868	70,113	82,108	106,251	96,358	103,509	93,702	Continuing	TBD
Quantity of RDT&E Articles		0	0	0	0	0	0	0	0	0
<p>In FY 2003, this project was renamed Launch and Test Range System (LTRS) Modernization (formerly Range Standardization and Automation (RSA) Program) to better depict on-going efforts. This action did not change project content.</p> <p>(U) <u>A. Mission Description</u> The Eastern Range (ER) at Patrick AFB and Cape Canaveral AFS, 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 Many range assets are outdated, unreliable, inefficient, and costly to operate and maintain.</p> <p>The Air Force is addressing range deficiencies through a two-part modernization program. First, the Range Standardization and Automation (RSA) Phase IIA contract continues to modernize the control/display and communication segments at both ranges. Second, the SLRSC 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.</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u> (U) \$33,758 Continued RSA Phase IIA. Continued development, test, and evaluation of RSA Phase IIA systems, to include: planning & scheduling, weather, communications network (voice, video, data, core, net manager), differential GPS for metric tracking, interim flight safety, final flight operations and analysis, and digital telemetry. Performed product engineering, integration efforts, engineering studies, and related tasks to support the architecture. (U) \$14,061 Continued SLRSC. Funded SLRSC systems engineering technical effort including architecture management, requirement management, systems integration, and engineering analyses. Funded instrument modernization system designs (including development of SLRS specification, instrument segment specification, and interface specifications), completion of system analyses, and trade studies. Continued assessment of COTS solutions for applicability to down-range instrumentation requirements and related design efforts.</p>										
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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
07 - Operational System Development	0305182F Spacelift Range System	4137
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2001 (\$ in Thousands) Continued</u>		
(U) \$2,319	Provided program support for Systems Program Office (SPO).	
(U) \$7,730	Conducted three follow-on California space infrastructure projects with funds added by Congress per request of California Space Authority (CSA).	
(U) \$57,868	Total	
(U) <u>FY 2002 (\$ in Thousands)</u>		
(U) \$33,809	Continue RSA Phase IIA. Continue 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, digital telemetry, command generation, simulation, and range operations. Perform product engineering, integration efforts, engineering studies, and related tasks to support the architecture. Provide operational support to test and evaluation.	
(U) \$32,146	Continue SLRSC. Continue SLRSC systems engineering technical effort including architecture management, requirement management, systems integration, and engineering analyses. Conduct instrument modernization systems design review. Begin development, testing, and evaluation of instrumentation systems to include: fixed and mobile telemetry, fixed and mobile command destruct equipment, fixed and mobile optics instruments, radars, radio frequency monitoring equipment, weather equipment, and surveillance equipment. 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) \$2,358	Provide program support for Systems Program Office (SPO).	
(U) \$1,800	In conjunction with California Space Authority (CSA), conduct space integration master planning to analyze future space requirements in support of homeland defense, with funds added by Congress.	
(U) \$70,113	Total	
(U) <u>FY 2003 (\$ in Thousands)</u>		
(U) \$40,458	Continue RSA Phase IIA. Continue development, test, and evaluation of RSA Phase IIA systems, including weather, communications network (voice, video, data, core, net manager), final flight operations and analysis, digital telemetry, command generation, simulation, and range operations. Perform product engineering, integration efforts, engineering studies, and related tasks to support the architecture. Provide operational support to test and evaluation.	
(U) \$38,337	Continue SLRSC. Continue SLRSC systems engineering technical effort including architecture management, requirement management, systems integration, and engineering analyses. Develop, test, and evaluate instrumentation systems to include: fixed and mobile telemetry,	
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BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT	
07 - Operational System Development		0305182F Spacelift Range System		4137	
(U) <u>A. Mission Description Continued</u>					
(U) <u>FY 2003 (\$ in Thousands) Continued</u>					
fixed and mobile command destruct equipment, fixed and mobile optics instruments, radars, radio frequency monitoring equipment, 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)	\$3,313	Provide program support for Systems Program Office (SPO).			
(U)	\$82,108	Total			
(U) <u>B. Budget Activity Justification</u>					
These efforts are categorized as Budget Activity 7, Operational Systems Development, since they upgrade existing operational capabilities with new systems. Funding for modernization of both the ER and the WR is consolidated in this program element to support the integrated SLRS approach.					
(U) <u>C. Program Change Summary (\$ in Thousands)</u>					
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U)	Previous President's Budget	84,373	65,097	74,898	TBD
(U)	Appropriated Value	85,154	65,097		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions	-596	-784		
	b. Small Business Innovative Research	-495			
	c. Omnibus or Other Above Threshold Reprogram				
	d. Below Threshold Reprogram	-2,665			
	e. Rescissions	-185			
(U)	Adjustments to Budget Years Since FY 2002 PBR	-23,345	5,800	7,210	
(U)	Current Budget Submit/FY 2003 PBR	57,868	70,113	82,108	TBD
(U) <u>Significant Program Changes:</u>					
FY 2001: \$2.7M decrease is a result of below-threshold reprogramming for higher AF priorities.					
FY 2001: \$23.3M decrease is a result of internal reprogramming of congressionally added funds of \$12.2M and \$11.1M to activate Rocket Test Stand 1D and upgrade Rocket Component Test Stand 2A, respectively, at Edwards AFB, CA. Funding was transferred to PE 0602203F, Aerospace Propulsion, Project 4847, Rocket Propulsion Technology, to align the funding with the appropriate budget activity for this effort.					
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BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305182F Spacelift Range System				PROJECT 4137		
(U) <u>C. Program Change Summary (\$ in Thousands) Continued</u>										
(U) <u>Significant Program Changes Continued:</u> FY 2002: \$5.8M increase added by Congress for RSA (\$4.0M) and space integration master planning for Homeland defense (\$1.8M) FY 2003: \$7.2M increase is a result of appropriation realignment to appropriately fund development effort.										
(U) <u>D. Other Program Funding Summary (\$ in Thousands)</u>										
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</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-64, BA 03)	95,031	131,841	108,281	152,558	182,204	172,876	181,173	Continuing	TBD	
(U) OPAF (PE 0305182F, Initial Spares, P-104, BA 05)	2,185	2,300	2,016	724	1,458	2,852	2,852	Continuing	TBD	
(U) <u>E. Acquisition Strategy</u> The AF is using a series of competitively awarded contracts to modernize the ranges. The RSA Phase IIA contract (FY 1996 to FY 2007) is standardizing and automating 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 under one contract.										
(U) <u>F. Schedule Profile</u>										
				<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>		
			1	2	3	4	1	2	3	4
(U) RSA Phase IIA										
(U) - Planning & Scheduling										
(U) -- Govt Acceptance					*					
(U) -- OT&E							X			
(U) -- Operational Turnover								X		
(U) - Weather										
(U) -- Display Integration Testing					*					
(U) -- First Increment Govt Acceptance							X			
(U) -- Second Increment Govt Acceptance								X		
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BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT		
07 - Operational System Development					0305182F Spacelift Range System					4137		
(U) <u>F. Schedule Profile Continued</u>												
		<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U) -- ER Dispersion Assessment System Govt Acceptance												X
(U) - Flight Operations Version 1 (FOV1)												
(U) -- ER Govt Acceptance				*								
(U) -- Operational Turnover								X				
(U) - Communications												
(U) -- ER Initial Increment Govt Acceptance				*								
(U) -- WR Initial Increment Govt Acceptance							X					
(U) -- ER Final Increment Govt Acceptance										X		
(U) -- WR Final Increment Govt Acceptance											X	
(U) - Differential GPS Metric Tracking												
(U) -- Operations Concept Complete				*								
(U) -- Govt Acceptance								X				
(U) - Flight Operations and Analysis												
(U) -- Requirements Release			*									
(U) -- Design Release							X					
(U) -- Qualification Testing											X	
(U) - Digital Telemetry												
(U) -- 1st Increment Contract Award				*								
(U) -- 2nd Increment Contract Award							X					
(U) -- Post-Detect Telemetry Design Release							X					
(U) -- Post-Detect Telemetry Govt Acceptance										X		
(U) - Command Generation, Simulation, and Range Operations												
(U) -- Begin product engineering/design								X				
(U) -- Begin systems integration												X
(U) SLRS Contract												
(U) - Contract Award			*									
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07 - Operational System Development					0305182F Spacelift Range System					4137				
(U) <u>F. Schedule Profile Continued</u>														
		<u>FY 2001</u>					<u>FY 2002</u>					<u>FY 2003</u>		
	1	2	3	4	1	2	3	4	1	2	3	4		
(U) - Complete System Design Review														
(U) - Complete Telemetry Instrumentation Preliminary Design Review (PDR)														
(U) - Complete Command Instrumentation PDR														
(U) - Start Weather, Command, & Telemetry Instrumentation Subsystem Design														
(U) - Start Radar, Optics, & Surveillance Instrumentation Subsystem Design														
(U) California Space Authority Studies/Projects														
(U) - Flight Termination Study Contract Award														
(U) - Extended Range Concept Study Contract Award														
(U) - Alternate Range Ops Control Center Tech Demo Contract Award														
* = completed event; X = planned event														

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
07 - Operational System Development				0305182F Spacelift Range System				4137			
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>			
(U)	RSA Phase IIA Contract					33,758	33,809	40,458			
(U)	SLRS Contract					14,061	32,146	38,337			
(U)	Program Support					2,319	2,358	3,313			
(U)	California Space Authority Studies/Projects					7,730	1,800				
(U)	Total					57,868	70,113	82,108			
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
(U) Performing Organizations:											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Product Development Organizations</u>										
	Lockheed Martin	C/CPAF	Nov 95	396,481	396,481	111,502	33,758	33,809	40,458	Continuing	TBD
	(RSA Phase IIA)										
	ITT Industries (SLRSC)	C/CPAF	Nov 00	293,692	293,692	1,000	14,061	32,146	38,337	Continuing	TBD
	<u>Support and Management Organizations</u>										
	SPO Program Support	Various	Various	N/A	N/A	16,526	2,319	2,358	3,313	Continuing	TBD
	(FFRDC, SETA, SPO Ops)										
	California Space Authority	Various	Various	N/A	N/A	8,036	7,730	1,800	0	0	17,566
	Studies/Projects										
	<u>Test and Evaluation Organizations</u>										
	N/A										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002	
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT	
07 - Operational System Development				0305182F Spacelift Range System			4137	
(U) Government Furnished Property:								
	<u>Contract</u>	<u>Award or</u>						
<u>Item</u>	<u>Method/Type</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>		<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
<u>Product Development Property</u>								
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.								
<u>Support and Management Property</u>								
N/A								
<u>Test and Evaluation Property</u>								
N/A								
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>
<u>Subtotals</u>					<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
Subtotal Product Development					112,502	47,819	65,955	78,795
Subtotal Support and Management					24,562	10,049	4,158	3,313
Subtotal Test and Evaluation								
Total Project					137,064	57,868	70,113	82,108
								<u>Budget to</u>
								<u>Complete</u>
								<u>Total</u>
								<u>Program</u>
								TBD
								TBD
								TBD
								TBD