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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2000		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305182F Spacelift Range System				PROJECT 674137		
COST (\$ in Thousands)		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
674137	Range Standardization and Automation (RSA)	27,594	50,989	53,654	52,306	55,511	57,147	49,984	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0
<p>(U) <u>A. Mission Description</u> The Eastern Range (ER) headquartered at Patrick AFB, FL and the Western Range (WR) headquartered at Vandenberg AFB, CA are the nation's Spacelift Ranges. They provide tracking, telemetry, communications, flight analysis, and other capabilities necessary to safely conduct Department of Defense, civil, and commercial spacelift operations; intercontinental and sea-launched ballistic missile operational test and evaluations (T&E); and aeronautical and guided weapons T&E. Many Range assets are outdated, unreliable, inefficient, and costly to operate and maintain.</p> <p>The Air Force is addressing range shortcomings through a phased modernization program. Funding identified in this document is for the modernization development efforts. Modernization is needed to meet documented requirements for a Spacelift Range System (SLRS) to support the evolving launch mission. The objectives are to improve operational flexibility, reliability, and supportability while reducing operations and maintenance costs.</p> <p>Two of the three modernization phases will continue in FY01. First, the Range Standardization and Automation (RSA) Phase IIA program will continue to develop upgrades to the control and display, and communication segments. Second, the SLRS Contract (SLRSC) will continue to develop an integrated suite of automated instrumentation, to include items previously planned for a follow-on RSA contract. Following are details of the FY99-01 RDT&E program:</p> <p>(U) <u>FY 1999 (\$ in Thousands)</u></p> <p>(U) \$8,004 Continued RSA Phase I: Completed integration of Centralized Telemetry Processing Subsystem (CTPS). Completed Cape Fiber Optic Network (CFON) installation. Continued RSA Phase I test and evaluation.</p> <p>(U) \$17,053 Continued RSA Phase IIA: Continued integration and testing of planning and scheduling and weather product items for operational turnover. Continued development of communications network including network core. Continued development of interim flight safety product for ER. Began development of voice, video and data network modernization. Began development of Differential GPS (DGPS) metric tracking system.</p> <p>(U) \$2,537 Provided program support for Systems Program Office.</p> <p>(U) \$27,594 Total</p>										
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BUDGET ACTIVITY		PROJECT
07 - Operational System Development	0305182F Spacelift Range System	February 2000 674137
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2000 (\$ in Thousands)</u>		
(U) \$1,768	Complete RSA Phase I: Complete RSA Phase test and evaluation and turnover.	
(U) \$35,051	Continue RSA Phase IIA: Continue integration and testing of planning and scheduling and weather product items for operational turnover. Continue development and begin testing of DGPS for metric tracking. Continue development and begin testing of voice, video and data network modernization. Continue development and begin testing of communication network including network core. Complete interim flight safety product for the ER. Begin development of final flight operations and analysis product for SLRS.	
(U) \$3,300	Begin SLRSC. Assess AFSPC's down-range instrumentation requirements and commercial off-the-shelf (COTS) products available to satisfy these requirements. Begin related design efforts.	
(U) \$2,370	Provide program support for Systems Program Office.	
(U) \$8,500	Fund California spaceport authority study and design of universal spaceport at Vandenberg AFB per congressional direction.	
(U) \$50,989	Total	
(U) <u>FY 2001 (\$ in Thousands)</u>		
(U) \$31,392	Continue RSA Phase IIA: Continue development of the final flight operations and analysis system. Complete DGPS for metric tracking. Continue development and testing of communications network including network core. Continue development and testing of voice, video and data network modernization. Complete testing of planning and scheduling and weather product items. Begin development of range operations, digital telemetry (previously referred to as CTPS), and related efforts under the control and display segment.	
(U) \$19,562	Continue SLRSC: Continue assessment of existing COTS solutions for applicability to down-range instrumentation requirements and related design efforts. Apply results of COTS assessments/design efforts to development of automated instrumentation for the SLRS, to include instrumentation previously planned for RSA program.	
(U) \$2,700	Provide program support for Systems Program Office.	
(U) \$53,654	Total	
(U) <u>B. Budget Activity Justification</u>		
These efforts are categorized as Budget Activity 7, Operational Systems Development, because they upgrade existing operational capabilities with new systems. Funding for RSA and SLRSC design and integration for both ER and WR is consolidated in this program element to support the integrated SLRS approach.		

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BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305182F Spacelift Range System			PROJECT 674137		
(U) C. Program Change Summary (\$ in Thousands)									
		<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>Total Cost</u>
(U)	Previous President's Budget (FY 2000 PBR)	24,457	43,186	49,130					TBD
(U)	Appropriated Value	24,578	51,686						
(U)	Adjustments to Appropriated Value								
	a. Congressional/General Reductions	-121	-14						
	b. Small Business Innovative Research	-801							
	c. Omnibus or Other Above Threshold Reprogram			-280					
	d. Below Threshold Reprogram	4,092							
	e. Rescissions	-154	-403						
	f. Other								TBD
(U)	Adjustments to Budget Years Since FY 2000 PBR			4,524					
(U)	Current Budget Submit/FY 2001 PBR	27,594	50,989	53,654					TBD
(U) Significant Program Changes:									
FY 1999: \$3,999 added to fund RSA Phase IIA execution shortfall; \$388 added to fund AFSPC Range Safety Study; and, \$295 deducted for higher AF priorities.									
FY 2000: Congress appropriated additional \$8,500 for California universal spaceport study/design for Vandenberg AFB; RSA Phase I extended into FY 2000 to complete test and transition activities, using funding available from revised estimate of other program costs.									
FY 2001: \$5,000 transferred from OPAF to provide necessary RDT&E/OPAF mix. \$476 deducted for higher AF priorities.									
(U) D. Other Program Funding Summary (\$ in Thousands)									
		<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</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)	OPAF, BA 03, P-66, Spacelift Range System Space*	91,340	82,682	92,714	145,209	135,403	146,268	164,479	TBD
	* FY 2001 through FY 2004 amounts reflect reductions due to transfer of funding from OPAF to RDT&E to provide necessary RDT&E/OPAF mix.								
(U) E. Acquisition Strategy									
The RSA Phase I contract was competitively awarded in FY 1993 to connect major ER stations at Antigua and Ascension Islands and the ER operations control center via a satellite communications network; to standardize and centralize telemetry processing for the ER and WR; and to modernize and automate the Cape Canaveral communications network. It ends in FY 2000.									

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(U) **E. Acquisition Strategy Continued**
 The RSA Phase IIA contract was competitively awarded in FY 1996 to provide an SLRS architecture and standardize and automate the ranges. It modernizes range safety, flight analysis, communications, range operations, planning and scheduling, and meteorological systems. It will end in FY 2006.

AFMC is competitively awarding the SLRSC in FY 2000 to consolidate remaining modernization efforts with systems integration and sustainment efforts under one contractor. The SLRSC will develop and procure automated down-range instrumentation originally planned for a follow-on RSA phase. The SLRSC will run through FY 2010.

(U) **F. Schedule Profile**

	<u>FY 1999</u>				<u>FY 2000</u>				<u>FY 2001</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) RSA Phase I												
(U) - Centralized Telemetry Processing Subsystem Installation/Checkout	*											
(U) - Cape Fiber Optic Network Installation		*										
(U) - System DT&E			*									
(U) - Operational T&E						X						
(U) - System Turnover							X					
(U) RSA Phase IIA												
(U) - Early Scheduling Tool Set for Automated Ranges Test Phase		*										
(U) - Planning and Scheduling ER Combined DT&E & IOT&E							X					
(U) - Planning and Scheduling WR Combined DT&E & IOT&E								X				
(U) - Weather ER DT&E/OT&E										X		
(U) - Weather WR DT&E/OT&E											X	
(U) -.Network Timing ER & WR Qualification Testing Complete				*								
(U) - Network Core WR Qualification Testing complete								X				
(U) - Network Manager WR Qualification Testing Complete									X			
(U) - Differential GPS for Metric Tracking Complete										X		
(U) SLRS Contract												
(U) - Acquisition Strategy Panel			*									
(U) - Contract Award						X						
(U) California Universal Spaceport Study												

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(U) **F. Schedule Profile Continued**

	<u>FY 1999</u>				<u>FY 2000</u>				<u>FY 2001</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) - Contract Award						X						

* = completed event; X = planned event

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

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

	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
(U) RSA Phase I Contract	8,004	1,768	0
(U) RSA Phase IIA Contract	17,053	35,051	31,392
(U) SLRS Contract	0	3,300	19,562
(U) Program Support	2,537	2,370	2,700
(U) California Universal Spaceport Study		8,500	
(U) Total	27,594	50,989	53,654

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

(U) **Performing Organizations:**

<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 1999</u>	<u>Budget FY 1999</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
Harris Corp (RSA Phase I)	C/CPAF	Jun 93	93,859	96,087	86,315	8,004	1,768	0	0	96,087
Lockheed Martin (RSA Phase IIA)	C/CPAF	Nov 95	153,222	153,848	60,292	17,053	35,051	31,392	Continuing	TBD
TBD (SLRSC)	TBD	Mar 00	TBD	TBD	0	0	3,300	19,562	Continuing	TBD
<u>Support and Management Organizations</u>										
Mission Support	Various	Various	N/A	N/A	11,357	2,537	2,370	2,700	Continuing	TBD
Universal Spaceport Study	MIPR	Feb 00	N/A	N/A	0	0	8,500	0	0	8,500
<u>Test and Evaluation Organizations</u>										
N/A										

(U) **Government Furnished Property:**

<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>	<u>Total Prior to FY 1999</u>	<u>Budget FY 1999</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget to Complete</u>	<u>Total Program</u>
N/A									

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(U) Government Furnished Property Continued:								
	<u>Contract</u>	<u>Award or</u>						
<u>Item</u>	<u>Method/Type</u>	<u>or Funding</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>	<u>to FY 1999</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Complete</u>
<u>Product Development Property</u>								
GFP determination is ongoing as work progresses on each RSA Phase IIA delivery increment. The current 1000+ item GFP list is too large to be included with this document. It 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>Budget to</u>
<u>Subtotals</u>				<u>to FY 1999</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Complete</u>
Subtotal Product Development				146,607	25,057	40,119	50,954	TBD
Subtotal Support and Management				11,357	2,537	10,870	2,700	TBD
Subtotal Test and Evaluation								
Total Project				157,964	27,594	50,989	53,654	TBD