

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

DATE  
**February 2000**

BUDGET ACTIVITY		PE NUMBER AND TITLE							
<b>07 - Operational System Development</b>		<b>0305910F SPACETRACK</b>							
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
Total Program Element (PE) Cost	42,410	54,010	2,553	583	0	0	0	0	TBD
674241 Advanced Electro Optical System (AEOS)	23,464	20,660	0	0	0	0	0	0	192,411
674279 Have Stare Radar	18,946	27,253	1,387	0	0	0	0	0	TBD
674791 GEODSS Sustainment	0	6,097	1,166	583	0	0	0	0	7,846
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

NOTE: Have Stare total cost not available since it was transferred from Intelligence budget in FY 93

**(U) A. Mission Description**

The SPACETRACK program element represents a worldwide Space Surveillance Network (SSN) of dedicated, collateral, and contributing electro-optical, passive radio frequency (RF) and radar sensors. The SSN is tasked to provide space object identification and cataloging, satellite attack warning, timely notification to U.S. forces of satellite fly-over, space treaty monitoring, and scientific and technical intelligence gathering. The continued increase in satellite and orbital debris populations, as well as the increasing diversity in launch trajectories, non-standard orbits, and geosynchronous altitudes, necessitates continued modernization of the SSN to meet existing and future requirements and ensure their cost-effective supportability. The resources and responsibility for completing the HAVE STARE Radar System development were transferred to SPACETRACK from an intelligence program per Congressional direction in FY93.

The GEODSS Sustainment project, a new effort, will develop and field ten Charge Coupled Device (CCD) Cameras for the Ground-Based Electro-Optical Deep Space Surveillance (GEODSS) System, located at Socorro, NM; Diego Garcia, Indian Ocean; and Maui, Hawaii. In addition, this project will fund the purchase and integration of ten Modular Precision Angular Control Systems (MPACS).

**(U) B. Budget Activity Justification**

All of these projects are Budget Activity 7, Operational Systems Development, because they involve development of or modifications to operational sensor network sites.

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BUDGET ACTIVITY		PE NUMBER AND TITLE		
<b>07 - Operational System Development</b>		<b>0305910F SPACETRACK</b>		
(U)	<u>C. Program Change Summary (\$ in Thousands)</u>			
		<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
				<u>Total Cost</u>
(U)	Previous President's Budget (FY 2000 PBR)	45,375	54,806	1,178
(U)	Appropriated Value	45,832	54,806	
(U)	Adjustments to Appropriated Value			
	a. Congressional/General Reductions	-457	-72	
	b. Small Business Innovative Research	-1,409		
	c. Omnibus or Other Above Threshold Reprogram		-297	
	d. Below Threshold Reprogram	-1,319		
	e. Rescissions	-237	-427	
	f. Other			TBD
(U)	Adjustments to Budget Years Since FY 2000 PBR			1,375
(U)	Current Budget Submit/FY 2001 PBR	42,410	54,010	2,553
	NOTE: Total cost data not available. Have Stare program transferred from the intelligence budget in FY93 at the direction of Congress.			
(U)	<u>Significant Program Changes:</u>			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2000			
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305910F SPACETRACK</b>				PROJECT <b>674241</b>		
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
674241	Advanced Electro Optical System (AEOS)	23,464	20,660	0	0	0	0	0	0	192,411
<p>(U) <b><u>A. Mission Description</u></b>                      The Advanced Electro-Optical System (AEOS) is a 3.67 meter telescope addition to the Maui Space Surveillance System (MSSS). The AEOS program was initiated in FY91 per Congressional direction. Congress continued to appropriate funding for this project in FY93, FY94, FY95, and FY96. DoD budgeted for the continuation of AEOS in FY97, FY98, FY99 and in FY00. This project is in Budget Activity 7, Operational Systems Development, because it involves sustained engineering support for development of, or modifications to, an operational SPACETRACK network site. Beginning in FY01, the Air Force Research Laboratory (AFRL) will assume management of AEOS, and funding will appear in PE 63444, Budget Activity 3, Advanced Technology.</p>										
<p>(U) <b><u>FY 1999 (\$ in Thousands)</u></b></p>										
(U)	\$14,570	Continued integration & test of Radiometer, Longwave Infrared Imager (LWIR) and Adaptive Optics (A/O) System								
(U)	\$1,713	Completed the MSSS Observatory Control System (OCS)								
(U)	\$5,841	R&D upgrades to the MSSS, operational transition of AEOS, visitor programs & purchase spares								
(U)	\$1,340	University of Hawaii (UH) spectrograph and atmospheric characterization research								
(U)	\$23,464	Total								
<p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b></p>										
(U)	\$10,175	Complete site testing and integration of the adaptive optics system; procurement of spares; transition of system from AFSPC to AFRL								
(U)	\$2,685	Complete integration and test upgrade to MSSS Observatory Control System								
(U)	\$7,800	Continue R&D and upgrades to MSSS (P3I items) such as AEOS/OCS enhancements to instrumentation and coude beam; advanced daylight imaging techniques and tool development								
(U)	\$20,660	Total								
<p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b></p>										
(U)	\$0	No Applicable								
(U)	\$0	Total								
Project 674241			Page 3 of 16 Pages				Exhibit R-2A (PE 0305910F)			

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>February 2000</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0305910F SPACETRACK</b>	PROJECT <b>674241</b>
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(U) **B. Project Change Summary**  
 Note: The Radiometer Acceptance, Long Wave Imager (LWI) and Observatory Control System (OCS) delays were due to software/hardware failures during Site Acceptance Testing. The Adaptive Optics SAT slip is due to technical software problems. The software/hardware problems are corrected and the program is on schedule for a Jun 00 DT&E completion.

(U) **C. 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>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) AF RDT&E									
(U) Other APPN None			4,625	4,627	4,625	4,622	4,617	Continuing	TBD

(U) **D. Acquisition Strategy**  
 All major contracts were awarded after full and open competition.

(U) **E. 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) Radiometer Acceptance				*								
(U) Long Wave Imager Acceptance				*								
(U) Observatory Control Sys Acceptance								X				
(U) Adaptive Optics System Acceptance					*							
(U) AEOS DT&E Complete								X				

\* indicates task completion/X indicates planned task

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2000		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305910F SPACETRACK			PROJECT 674241		
(U) <b><u>A. Project Cost Breakdown (\$ in Thousands)</u></b>										
						<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>		
(U)	Congressionally directed level of effort for AEOS Maui facilities expansion					23,464	20,660	0		
(U)	Total					23,464	20,660	0		
(U) <b><u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u></b>										
(U) <b><u>Performing Organizations:</u></b>										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 1999</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Kiewit Pacific Co	C/FFP/AF	Aug 94	21,000	22,979	22,979	0	0		0	22,979
Kapolei, HI										
Contraves USA	C/FFP/AF	Dec 91	23,000	23,413	23,413	0	0		0	23,413
Pittsburgh, PA										
ROSI	C/CPAF/AF	Aug 94	31,000	36,962	27,353	7,009	2,600	0	0	36,962
Danbury, CT										
COMSAT RSI, Inc	C/FFP/AF	Aug 95	7,000	7,289	7,289	0	0	0	0	7,289
Clarksburg, MD										
Mission Research Corp	C/CPIF/AF	Jul 95	4,600	5,760	4,860	600	300	0	0	5,760
Santa Barbara, CA										
Raytheon	C/CPIF/AF	Sep 95	5,800	9,023	6,948	1,700	375	0	0	9,023
El Segundo, CA										
RTS	C/CPAF/AF	Sep 95	N/A	41,006	16,640	9,941	13,885	0	0	40,466
Kihei, Maui, HI										
RPS	C/CPAF/AF	Oct 90	N/A	41,006	12,933	0	0	0	0	12,933
Kihei, Maui, HI										
UH*	C/CR/AF	Oct 96	3,400	3,665	1,700	1,340	625	0	0	3,665
Maui, HI										
Project 674241										
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE February 2000
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT
<b>07 - Operational System Development</b>					<b>0305910F SPACETRACK</b>					<b>674241</b>
<b>(U) <u>Performing Organizations Continued:</u></b>										
*Congressionally directed Spectrograph Research/Atmospheric Characterization										
<u>Support and Management Organizations</u>										
Logicon RDA	C/CPAF/AF	Oct 95	N/A	N/A	2,457	399	350	0	0	3,206
Albuquerque, NM										
Logicon RDA	C/CPAF/AF	Oct 93	N/A	N/A	3,360	0	0	0	0	3,360
Albuquerque, NM										
MIT/LL	SS	Oct 93	N/A	N/A	2,566	250	300	0	0	3,116
Cambridge, MA										
S. Systems Corp	C/CPFF/AF	Jul 93	N/A	N/A	2,976	0	0	0	0	2,976
Albuquerque, NM										
ARMY COE	SS	Jan 95	N/A	N/A	1,617	0	0	0	0	1,617
Haleakala, Maui, HI										
WJS	SS	Oct 97	N/A	N/A	259	150	150	0	0	559
Albuquerque, NM										
Program Office	Various	N/A	N/A	N/A	10,937	2,075	2,075	0	0	15,087
<u>Test and Evaluation Organizations</u>										
None										
<b>(U) <u>Government Furnished Property:</u></b>										
	<u>Contract</u>									
	<u>Method/Type</u>	<u>Award or</u>								
<u>Item</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>Budget to</u>	<u>Total</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>Program</u>
<u>Product Development Property</u>										
None										
<u>Support and Management Property</u>										
None										
<u>Test and Evaluation Property</u>										
None										

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<b>RDT&amp;E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)</b>			DATE <b>February 2000</b>			
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
<b>07 - Operational System Development</b>		<b>0305910F SPACETRACK</b>			<b>674241</b>	
	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
	<u>to FY 1999</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development	124,115	20,590	17,785	0	0	162,490
Subtotal Support and Management	24,172	2,874	2,875	0	0	29,921
Subtotal Test and Evaluation						
Total Project	148,287	23,464	20,660	0	0	192,411

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2000		
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305910F SPACETRACK</b>				PROJECT <b>674279</b>	
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
674279 Have Stare Radar	18,946	27,253	1,387	0	0	0	0	0	TBD
NOTE: Have Stare total cost not available since it was transferred from intel budget in FY93									
(U) <b><u>A. Mission Description</u></b>									
The HAVE STARE radar (FPS-129) was transferred from the intelligence budget in FY93 at the direction of Congress. The Air Force has identified a requirement for the HAVE STARE system and has programmed funding in this program element to complete development and to deploy the system. The radar is a high resolution X-band tracking and imaging radar with a 27 meter mechanical dish antenna. The system is being deployed to Vardø, Norway, as a dedicated space surveillance sensor to support the mission of space object catalog maintenance and mission payload assessment. Progress in FY 99 was completion of the radar tower, installation of antenna, radome, and most radar electronics. The radar will not be a fully integrated element of the Missile Warning Network. The radar will only be integrated with the Space Control Center (Cheyenne Mtn AS, CO) and the Alternate Space Control Center (Dalgren Naval Surface Warfare Center, VA)									
(U) <b><u>FY 1999 (\$ in Thousands)</u></b>									
(U) \$1,200	Continued radar development incremental funding								
(U) \$5,600	Continued site preparations								
(U) \$11,224	Deployed and installed program equipment								
(U) \$922	Continued Logistics and training								
(U) \$18,946	Total								
(U) <b><u>FY 2000 (\$ in Thousands)</u></b>									
(U) \$11,900	Complete facility preparation								
(U) \$7,879	Complete system installation, integration, and checkout								
(U) \$5,084	Conduct formal system tests								
(U) \$2,150	Continue Logistics and training								
(U) \$240	Demolish test facility and cleanup test site								
(U) \$27,253	Total								
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BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305910F SPACETRACK</b>			PROJECT <b>674279</b>		
(U) <b><u>A. Mission Description Continued</u></b>									
(U) <u>FY 2001 (\$ in Thousands)</u>									
(U)	\$500	Complete system development							
(U)	\$587	Complete testing							
(U)	\$300	Accomplish residual logistics and training							
(U)	\$1,387	Total							
(U) <b><u>B. Project Change Summary</u></b>									
FY01: Funds added to finish installation and checkout of radar in Vardo, Norway.									
Projected schedule slip (Section E): Recent accident (Nov 99) occurred in Vardo, Norway when high winds blew of the Radome. The projected schedule slip is 6-8 months. Initial Operational Capability (IOC) is now scheduled for 4th Qtr of FY01 and Full Operational Capability (FOC) is scheduled for 3rd Qtr FY02.									
(U) <b><u>C. Other Program Funding Summary (\$ in Thousands)</u></b>									
	<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>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)	AF RDT&E								
(U)	Other APPN								
(U)	Operations and Maintenance	49,412	51,485	52,634	50,860	51,407	53,619	57,898	Continuing
	AF*								
	* Includes other projects in the Spacetrack program element								
(U) <b><u>D. Acquisition Strategy</u></b>									
The existing contract with Raytheon was modified in the third quarter of FY98 for the dismantling, shipment, and installation of the radar, and will be extended until FY01									
(U) <b><u>E. Schedule Profile</u></b>									
			<u>FY 1999</u>			<u>FY 2000</u>		<u>FY 2001</u>	
			1	2	3	4	1	2	3
(U)	Radar dismantled at Test Site (Vandenberg AFB)					*			
(U)	Begin Installation at Operational Site (Vardø, Norway)					*			
(U)	Formal System Testing Completed								X
(U)	System Initial Operational Capability								X
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0305910F SPACETRACK</b>	PROJECT <b>674279</b>
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(U) E. 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

\* indicates completed event/X planned event.

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2000			
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305910F SPACETRACK</b>			PROJECT <b>674279</b>			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 1999</u>		<u>FY 2000</u>		<u>FY 2001</u>
(U)	System development					1,000		0		0
(U)	Site preparation and support					5,000		10,900		0
(U)	Deployment, installation and checkout					9,894		7,229		0
(U)	Logistics and training					922		2,000		0
(U)	Formal system testing					0		4,634		0
(U)	Complete open development and testing items					0		0		587
(U)	SPO support					2,130		2,290		800
(U)	Take down test facility and cleanup test site					0		200		0
(U)	Total					18,946		27,253		1,387
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<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>										
Raytheon Elec Sys Sudbury, MA	C/CPIF/AF	Mar 91	26,520	26,520	3,022	10,494	12,032	500	0	26,048
Site Preparation	Various	Various	N/A	N/A	2,100	5,000	10,850	0	0	17,950
Misc	Various	Various	N/A	N/A	563	734	1,519	0	0	2,816
Total prior to FY 1999 data not available; program transferred from the intelligence budget in FY93 at the direction of Congress										
<u>Support and Management Organizations</u>										
MITRE	SS/PR	Oct 99	N/A	N/A	800	728	800	250	0	2,578
A&AS	C/PR	Various	N/A	N/A	1,123	954	800	587	0	3,464
Lincoln Lab	SS/PR	Oct 99	N/A	N/A	230	145	0	0	0	375
Program Office	Various	Various	N/A	N/A	354	451	690	50	0	1,545
Misc	Various	Various	N/A	N/A	24	440	562	0	0	1,026
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BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305910F SPACETRACK			PROJECT 674279	
(U) <u>Performing Organizations Continued:</u>								
<u>Test and Evaluation Organizations</u>								
None								
(U) <u>Government Furnished Property:</u>								
	<u>Contract</u>							
	<u>Method/Type</u>	<u>Award or</u>						
<u>Item</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>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>								
None								
<u>Support and Management Property</u>								
None								
<u>Test and Evaluation Property</u>								
None								
				<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				5,685	16,228	24,401	500	0
Subtotal Support and Management				2,531	2,718	2,852	887	0
Subtotal Test and Evaluation								
Total Project				8,216	18,946	27,253	1,387	0
Have Stare total cost data not available; program transferred from the intelligence budget in FY93 at the direction of Congress. Prior years data reflects costs since FY93.								

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BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305910F SPACETRACK</b>				PROJECT <b>674791</b>	
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
674791 GEODSS Sustainment	0	6,097	1,166	583	0	0	0	0	7,846
<p>Note: This was a new start in FY00.</p> <p>(U) <b><u>A. Mission Description</u></b>                      The GEODSS Sustainment project begins in FY00 to develop and field ten Charge Coupled Device (CCD) Cameras for the Ground-Based Electro-Optical Deep Space Surveillance (GEODSS) System, located at Socorro, NM; Diego Garcia, Indian Ocean; and Maui, Hawaii. The project includes associated software changes to the Optical, Command, Control &amp; Communications (OC3F) at Edwards AFB, CA. In addition, this project purchases and integrates ten replacement Modular Precision Angular Control Systems (MPACS) and funds associated logistics requirements, technical data and training. The project develops the first components and installs them at the test unit at site 1, Socorro, NM. Follow-on CCD cameras and MPACS will be produced and installed using Space Track Modification funds (BP83). This project, with the recently completed GEODSS Modification Program, will result in more than double the throughput and search rate of the legacy system. Without CCD camera replacement, the entire GEODSS system will be unusable in the FY02 time-frame, as mission critical Ebsicon tubes are no longer manufactured or supported by any vendor and the current supply of spares will run out by the end of 2001. This would result in loss of geosynchronous space situational awareness and less ability to assess the space order of battle of a potential aggressor.</p> <p>(U) <b><u>FY 1999 (\$ in Thousands)</u></b>                      (U) \$0 Not Applicable                      (U) \$0 Total</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b>                      (U) \$2,179 Begin CCD design                      (U) \$1,600 Begin camera design                      (U) \$1,000 Design MPACS                      (U) \$1,318 Develop Test bed at Site 1, Socorro, New Mexico                      (U) \$6,097 Total</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>                      (U) \$166 Stand-up and begin operational use of Test Bed at Site 1, Socorro, New Mexico                      (U) \$500 Complete CCD camera design                      (U) \$500 Test prototype camera / MPACS                      (U) \$1,166 Total</p>									
Project 674791			Page 13 of 16 Pages				Exhibit R-2A (PE 0305910F)		

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>February 2000</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0305910F SPACETRACK</b>	PROJECT <b>674791</b>
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(U) **B. Project Change Summary**  
 This project was reported as a new start in FY00.

(U) **C. 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>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) AF RDT&E									
(U) Other APPN									
(U) (Space Mods for BA 83) *			9,110	8,784	3,034			0	20,928

\* Space modifications for the GEODSS Sustainment project only

(U) **D. Acquisition Strategy**  
 The contract for the GEODSS Sustainment project will be awarded after full and open competition.

(U) **E. 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) Contract Award						X						
(U) Preliminary Design Review							X					
(U) Critical Design Review								X				
(U) Test Bed Standup									X			
(U) Prototype Mod Kit Test										X		
(U) Site 1 Mod Kit (1st article) in production												X

\* indicates completed event/X indicates planned event  
 Operational acceptance of 1st unit at Site 1 is Aug 02

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2000		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305910F SPACETRACK			PROJECT 674791		
(U) <b><u>A. Project Cost Breakdown (\$ in Thousands)</u></b>										
						<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>		
(U)	System Engineering					0	1,818	200		
(U)	Hardware Development					0	1,766	666		
(U)	Software Development					0	600	300		
(U)	Program Office Support					0	1,913	0		
(U)	Total					0	6,097	1,166		
(U) <b><u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u></b>										
(U) <b><u>Performing Organizations:</u></b>										
	<u>Contractor or</u>	<u>Contract</u>								
	<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>					
	<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
	<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 1999</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Complete</u>
	<u>Product Development Organizations</u>									<u>Total</u>
	Prime Contractor	TBD	Feb 00	TBD	6,015	0	0	4,184	1,166	583
	<u>Support and Management Organizations</u>									
	MITRE	SS/PR	Jan 00	TBD	750	0	0	750	0	0
	MIT/Lincoln Lab	SS/PR	Jan 00	TBD	500	0	0	500	0	0
	A&AS	C/PR	Jan 00	TBD	500	0	0	500	0	0
	Other Support	Various	Jan 00	TBD	163	0	0	163	0	0
	<u>Test and Evaluation Organizations</u>									
	None									
(U) <b><u>Government Furnished Property:</u></b>										
		<u>Contract</u>								
		<u>Method/Type</u>	<u>Award or</u>							
	<u>Item</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>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>									<u>Total</u>
	None									

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<b>RDT&amp;E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)</b>	DATE <b>February 2000</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0305910F SPACETRACK</b>	PROJECT <b>674791</b>
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(U) **Government Furnished Property Continued:**

Support and Management Property

None

Test and Evaluation Property

None

	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>	<u>to FY 1999</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development	0	0	4,184	1,166	583	5,933
Subtotal Support and Management	0	0	1,913	0	0	1,913
Subtotal Test and Evaluation						
<b>Total Project</b>	<b>0</b>	<b>0</b>	<b>6,097</b>	<b>1,166</b>	<b>583</b>	<b>7,846</b>