

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 1997
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BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305911F Defense Support Program (Space)
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COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	33,969	25,009	23,193	39,946	24,446	20,208	34,355	35,140	0	2,054,500
3615 Shield/Alert	5,262	9,089	9,108	8,602	3,625	4,247	0	0	0	56,371
3624 Defense Support Program	28,707	15,920	14,085	31,344	20,821	15,961	34,355	35,140	0	1,998,129
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

Note: FY96 \$3.72M to be transferred from BPAC 3624 to 3615 to correct erroneous Shield/ALERT reductions.

(U) A. Mission Description and Budget Item Justification

The Defense Support Program (DSP) is a system of satellites in geostationary orbits, fixed and mobile ground processing stations, one multi-purpose facility, and a ground communications network. DSP's primary mission is to provide tactical warning and limited attack assessment of a ballistic missile attack. The Shield/ALERT (Attack and Launch Early Reporting to Theater) is a ground station mission processing upgrade which exploits inherent satellite capability to provide theater missile warning and cueing. DSP is an operational system and is, therefore, included in Budget Activity 7, Operational Systems Support.

(U) Acquisition Strategy

DSP is currently sustaining production of the remaining satellites, 18 through 23. This sustainment includes post production storage, testing, preparation for launch and on orbit testing. Current contract efforts are required to stretch the support of launch centers to 12 months from the originally contracted 6 month launch centers. Satellite 23 will be the last of the DSP satellites to be procured. The follow-on to DSP, Space Based Infrared Systems satellites, will replace DSP starting in FY02. The ALERT squadron was activated on 1 Oct 94 with an ALERT Initial Operating Capability reached on 10 Mar 95. Further Shield RDT&E efforts will be required to meet the Air Force Space Command Full Operational Capability requirements and for use as the path finder for the first increment of the ground consolidation.

(U) B. Program Change Summary (\$ in Thousands)

	<u>FY 1996</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>Total Cost</u>
(U) Previous President's Budget (FY97)	34,870	29,397	36,715	36,022	Continuing
(U) Appropriated Value		26,844			
(U) Adjustments to Appropriated Value					
a. Congressional General Reduction/Adds		-1,277			
b. SBIR/Other		-558			
c. Omnibus or Other Above Threshold Reprogram					
d. Below Threshold Reprogramming	-901				
(U) Adjustments to Budget Years Since FY97 PB			-13,522	3,924	

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BUDGET ACTIVITY 7 - Operational System Development					PE NUMBER AND TITLE 0305911F Defense Support Program (Space)							
(U) Current Budget Submit/President's Budget	<u>FY 1996</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>Total Cost</u>							
	33,969	25,009	23,193	39,946	Continuing							
(U) Change Summary Explanation:												
Funding: FY98/99 reductions fund other AF andDoD priorities												
Schedule: None.												
Technical: None.												
(U) C. <u>Other Program Funding Summary (\$ in Thousands)</u>												
	<u>FY 1996</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>To Complete</u>	<u>Total Cost</u>		
(U) Missile Procurement	64,729	70,693	113,708	137,722	195,527	181,402	140,498	140,735	Continue	Continue		
(U) Other Procurement	37,476	3,386	186	90	14	6	0	0	0	45,438		
<u>Related RDT&E:</u>												
(U) PE #603441F - SBIRSDem/Val												
(U) PE #604441F - SBIRS EMD												
(U) D. <u>Schedule Profile</u>												
		<u>FY 1996</u>			<u>FY 1997</u>			<u>FY 1998</u>			<u>FY 1999</u>	
	1	2	3	4	1	2	3	4	1	2	3	4
(U) DSP Satellite Deliveries		X									X	
(U) Begin ALERT Blue SuitOrg. Maint.					X							
(U) Final ALERT Hardware Installation					X							
(U) SBIRS MCS Operational												X
(U) DSP Satellite Launches					X			X			X	

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COST (<i>In Thousands</i>)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
3615 Shield/Alert*	5,262	9,089	9,108	8,602	3,625	4,247	0	0	0	56,371

(U) A. Mission Description and Budget Item Justification

The Shield project identified changes to existing DSP processing to enhance theater missile defense warning capabilities. These enhancements will facilitate more timely and accurate detection, identification, location and tracking of theater missile threats. This data supports attack operations and interforce operations by providing accurate, timely launch prediction. In addition, this data will support active and passive defense forces by providing target cueing data and precise impact point prediction. The Air Force will transition these enhancements to an operational system, ALERT, to provide continuous real-time warning to the fighter.

(U) FY 1996

- (U) \$7,086 Continue development to achieve ALERT full operational capability.
- (U) \$329 Continue Operations and Maintenance Training Plan development and implementation.
- (U) \$1,567 FFRDC and office support.
- (U) -\$3,720 Funds to be transferred from BPAC 3624 to BPAC 3615, within PE 35911F, to correct erroneous Shield/ALERT reductions.
- (U) \$5,262 Total

(U) FY 1997

- (U) \$6,876 Continue engineering task development to prototype and implement ALERT capabilities leading up to Increment I.
- (U) \$2,213 FFRDC and office support.
- (U) \$9,089 Total

(U) FY 1998 (\$ in Thousands)

- (U) \$7,273 Continue engineering task development to prototype and implement ALERT capabilities leading up to Increment I.
- (U) \$1,835 FFRDC and office support.
- (U) \$9,108 Total

(U) FY 1999 (\$ in Thousands)

- (U) \$6,967 Continue engineering task development to prototype and implement ALERT capabilities leading up to Increment I.
- (U) \$1,635 FFRDC and office support.
- (U) \$8,602 Total

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BUDGET ACTIVITY 7 - Operational System Development		PE NUMBER AND TITLE 0305911F Defense Support Program (Space)	
		PROJECT 3615	

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

	<u>FY 1996</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>Total Cost</u>
(U) Previous President's Budget (FY97)	5,100	912	9,185	8,685	
(U) Appropriated Value		912			
(U) Adjustments to Appropriated Value					
a. Congressional General Reductions		-270			
b. SBIR	0	0			
c. Omnibus or Other Above Threshold Reprogramming		8,447			
d. Below Threshold Reprogramming	162				
(U) Adjustments to Budget Years Since FY97 PB			-77	-83	
(U) Current Budget Submit/President's Budget	5,262	9,089	9,108	8,602	39,933

(U) Change Summary Explanation:
 Funding: FY96 increase wastransferred from BPAC 3624 , Defense Support Program.
 Schedule: None.
 Technical: None.

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

Not Applicable

Related RDT&E:
 (U) PE #603441F - SBIRSDem/Val
 (U) PE #604441F - SBIRS EMD

(U) **D. Schedule Profile**

	<u>FY 1996</u>				<u>FY 1997</u>				<u>FY 1998</u>				<u>FY 1999</u>			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(U) Begin ALERT Blue SuitOrg. Maint.					X											
(U) Final ALERT Hardware Installation						X										
(U) SBIRS MCS Operational																X

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE February 1997	
BUDGET ACTIVITY 7 - Operational System Development					PE NUMBER AND TITLE 0305911F Defense Support Program (Space)					PROJECT 3615	
(U) A. <u>Project Cost Breakdown (\$ in Thousands)</u>											
					<u>FY 1996</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>			
(U) Contractor Engineering Support					0	835	600	447			
(U) Software Development					100	1,458	1,250	1,455			
(U) Program Management Support					1,833	1,711	1,776	1,595			
(U) Training Development					1,380	200	903	365			
(U) Developmental Test and Evaluation					0	2,672	1,271	1,327			
(U) Technical Data					4,102	0	1,473	1,778			
(U) Travel					63	30	35	35			
(U) Government Engineering Support					1,504	2,183	1,800	1,600			
(U) Adjustments					-3,720						
(U) Total					5,262	9,089	9,108	8,602			
(U) B. <u>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 1996	Budget FY 1996	Budget FY 1997	Budget FY 1998	Budget FY 1999	Budget to Complete	Total Program
<u>Product Development Organizations</u>											
Aerojet	CPAF	Aug 92			7,898						7,898
SPARTA	CPAF	Aug 94			487						487
Lincoln Lab	PO	Mar 95			288						288
Aerojet (FO)*	CPAF	Oct 95	27,035	27,671	0	6,948	6,491	7,273	6,967	7,002	34,681
NRC						239					239
<u>Support and Management Organizations</u>											
SMC					1,624	1,567	2,213	1,835	1,635	870	9,744
Dept Air Force	AF616				6,141	228	385				6,754
<u>Test and Evaluation Organizations</u>											
Not Applicable											
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE February 1997
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BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305911F Defense Support Program (Space)	PROJECT 3615
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(U) B. Budget Acquisition History and Planning Information Continued (\$ in Thousands)

Government Furnished Property:

Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1996	Budget FY 1996	Budget FY 1997	Budget FY 1998	Budget FY 1999	Budget to Complete	Total Program
<u>Product Development Property</u>										
GF Hardware			Aug 94							427
<u>Support and Management Property</u>										
Not Applicable										
<u>Test and Evaluation Property</u>										
Not Applicable										
*EAC does not include award fee										
Subtotal Product Development				8,673	7,187	6,491	7,273	6,967	7,002	43,593
Subtotal Support and Management				7,765	1,795	2,598	1,835	1,635	870	16,498
Subtotal Test and Evaluation										
Adjustments					-3,720					-3,720
Total Project				16,438	5,262	9,089	9,108	8,602	7,872	56,371

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 1997		
BUDGET ACTIVITY 7 - Operational System Development					PE NUMBER AND TITLE 0305911F Defense Support Program (Space)				PROJECT 3624	
COST <i>(In Thousands)</i>	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
3624 Defense Support Program	28,707	15,920	14,085	31,344	20,821	15,961	34,355	35,140	0	1,998,129
<p>(U) A. Mission Description and Budget Item Justification</p> <p>The Defense Support Program (DSP) system provides a space-based surveillance system to detect and report missile and space launches and nuclear detonations in near real time during pre-, trans-, and post-attack periods. The DSP system consists of a constellation of satellites in geostationary orbits, fixed and mobile ground processing stations, one multi-purpose facility, and a ground communications network. DSP's primary mission is to provide tactical warning and limited attack assessment of a ballistic missile attack. DSP also detects and reports nuclear detonation events and provides information for theater warning and exploitation. This program element provides funding for development to modernize ground stations to ensure continued operability, integration of satellites to launch vehicles, procurement of satellites and ground station hardware, and operation of the DSP ground stations.</p> <p>(U) FY 1996</p> <ul style="list-style-type: none"> - (U) \$752 Continue special studies to support DSP satellite manufacturing, production, test, and launch activities as required. - (U) \$5,077 Continue orbital constellation support software development and anomaly resolution. - (U) \$106 Continue independent verification and validation. - (U) \$3,696 FFRDC. - (U) \$6,743 Program office support (TDYs, supplies, etc.). - (U) \$3,594 Continue yearly software development facility support to ground station operations activities. - (U) \$250 Continue development to replace unsupportable RADEC (Radiation Detection) Data Units at the fixed ground stations. - (U) \$1,273 Continue development and sustaining capabilities for acquisition logistics engineering. - (U) \$1,410 Continue acquisition and engineering support. - (U) \$2,086 Continue engineering task development to prototype and implement ALERT capabilities leading up to Increment I. - (U) \$3,720 Funds transferred from BPAC 3624 to BPAC 3615 within PE 35911F - (U) \$28,707 Total <p>(U) FY 1997</p> <ul style="list-style-type: none"> - (U) \$1,690 Development of engineering efforts for DSP Spacecraft. - (U) \$5,378 Development of engineering efforts for DSP Sensor. - (U) \$274 Continue independent verification and validation. - (U) \$740 FFRDC. - (U) \$1,041 Continue acquisition and engineering support. - (U) \$1,000 Continue development and sustaining capabilities for acquisition logistics engineering. 										
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BUDGET ACTIVITY		February 1997
7 - Operational System Development	PE NUMBER AND TITLE	PROJECT
	0305911F Defense Support Program (Space)	3624
<ul style="list-style-type: none">- (U) \$5,797 Program office support (TDYs, supplies, etc.).- (U) \$15,920 Total		
<p>(U) <u>FY 1998 (\$ in Thousands)</u></p> <ul style="list-style-type: none">- (U) \$11,485 Software changes toaccomodate Year 2000 roll-over- (U) \$800 FFRDC- (U) \$1,800 Program office support (computer support)- (U) \$14,085 Total		
<p>(U) <u>FY 1999 (\$ in Thousands)</u></p> <ul style="list-style-type: none">- (U) \$5,000 Software changes toaccomodate Year 2000 roll-over- (U) \$1,800 Program office support (computer support)- (U) \$800 FFRDC- (U) \$23,744 ECO Risk- (U) \$31,344 Total		

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BUDGET ACTIVITY 7 - Operational System Development				PE NUMBER AND TITLE 0305911F Defense Support Program (Space)				PROJECT 3624	

(U) B. <u>Program Change Summary (\$ in Thousands)</u>	<u>FY 1996</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>Total Cost</u>
(U) Previous President's Budget (FY97)	29,770	28,485	27,530	27,337	Continuing
(U) Appropriated Value		25,485			
(U) Adjustments to Appropriated Value					
a. Congressional General Reductions		-9,007			
b. SBIR/Other		-558			
c. Omnibus or Other Above Threshold Reprogramming					
d. Below Threshold Reprogramming	-1,063				
(U) Adjustments to Budget Years Since FY97 PB			-13,445	4,007	
(U) Current Budget Submit/President's Budget	28,707	15,920	14,085	31,344	Continuing

(U) Change Summary Explanation:
 Funding: FY98 reductions funded other AF and DOD priorities
 Schedule: None.

 Technical: None.

(U) C. <u>Other Program Funding Summary (\$ in Thousands)</u>		<u>FY 1996</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>To Complete</u>	<u>Total Cost</u>
(U) Missile Procurement		64,729	70,693	113,708	137,722	195,527	181,402	140,498	140,735	Continuing	Continuing
(U) Other Procurement		37,476	3,386	186	90	14	6				41,158

Related RDT&E:
(U) PE #603441F - SBIRSDem/Val
(U) PE #604441F - SBIRS EMD

(U) D. <u>Schedule Profile</u>		<u>FY 1996</u>				<u>FY 1997</u>				<u>FY 1998</u>				<u>FY 1999</u>			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
(U) Satellite deliveries		X													X		
(U) Satellite launches						X				X					X		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 1997				
BUDGET ACTIVITY 7 - Operational System Development				PE NUMBER AND TITLE 0305911F Defense Support Program (Space)				PROJECT 3624			
(U) A. <u>Project Cost Breakdown (\$ in Thousands)</u>											
				<u>FY 1996</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>				
(U) Program Office Support				5,743	4,797	1,800	1,800				
(U) Contractor Engineering Support				11,615	7,342	11,485	5,000				
(U) Research Personnel (FFRDC)				3,696	740	800	800				
(U) Travel				1,000	1,000	0	0				
(U) Government Engineering Support				2,933	2,041						
(U) Adjustments				3,720							
(U) ECO/Risk										23,744	
(U) Total				28,707	15,920	14,085	31,344				
(U) B. <u>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 1996	Budget FY 1996	Budget FY 1997	Budget FY 1998	Budget FY 1999	Budget to Complete	Total Program
<u>Product Development Organizations</u>											
Aerojet*	CPAF	Oct 93	24,352	24,352	16,922	5,077					21,999
Aerojet	CPAF	Sep 93			9,025						9,025
Aerojet	CPFF				25,743						25,743
Aerojet	CPAF	Oct 95			124	2,454					2,454
Loral	FPI/AF/CPF		28,137	37,732	37,510	222					37,732
DOE	P.O.				10,474	250					10,724
Program OffSppt	Various				57,751	6,743	5,797	1,800	1,800	6,230	80,122
ECO Risk									23,744	104,670	23,744
Loral	CPAF		22,975	22,975	22,975						22,975
Project 3624											
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BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT	
7 - Operational System Development					0305911F Defense Support Program (Space)					3624	
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 1996	Budget FY 1996	Budget FY 1997	Budget FY 1998	Budget FY 1999	Budget to Complete	Total Program
*EAC is also funded by other appropriations											
<u>Support and Management Organizations</u>											
Various	MIPRs				5,956	345					
Aerojet	CPFF		1,305	1,305	1,305						1,305
Aerojet/Consolidated	FFP	May 96			197		5,378				5,575
AerospaceCorp	MORD				37,673	3,696	740	800	800	3,200	46,909
Other Gov't Cost *					17,913	2,683		11,485	5,000		37,081
TRW	CPFF				9,120	752					9,872
TRW Consolidated	CPAF	May 96					1,690				1,690
PRC	FPIF	Apr 94			4,839	1,047	2,315				8,201
SPARTA	CPAF	Aug 94			150						150
	MORDs				13,325	1,718					15,043
*Note: HQ AFMC Space Systems Support Group (SSSG) for Year 2000 software development											
<u>Test and Evaluation Organizations</u>											
Not Applicable.											

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BUDGET ACTIVITY 7 - Operational System Development				PE NUMBER AND TITLE 0305911F Defense Support Program (Space)				PROJECT 3624		
(U) B. Budget Acquisition History and Planning Information Continued (\$ in Thousands)										
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 1996</u>	<u>Budget FY 1996</u>	<u>Budget FY 1997</u>	<u>Budget FY 1998</u>	<u>Budget FY 1999</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Property</u>										
SRSU	FFIF/CPAF	1989								
<u>Support and Management Property</u>										
Not Applicable										
<u>Test and Evaluation Property</u>										
Not Applicable										
Subtotal Product Development				1,535,219	14,746	5,797	1,800	25,544	110,900	1,694,006
Subtotal Support and Management				266,681	10,241	10,123	12,285	5,800	3,200	308,330
Subtotal Test and Evaluation										
Adjustment					3,720					3,720
Project Total				1,801,900	28,707	15,920	14,085	31,344	114,100	2,006,056