

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE <b>February 1997</b>
---	------------------------------

BUDGET ACTIVITY <b>4 - Demonstration and Validation</b>	PE NUMBER AND TITLE <b>0603441F Space Based IR ArchDem/Val) (Space)</b>
--	--

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	249,436	237,532	222,401	126,485	94,417	94,428	0	0	0	1,323,103
0007 SBIRS Low	233,825	230,747	219,441	126,485	94,417	94,428	0	0	0	1,292,547
0008 Cobra Brass	15,611	6,785	2,960	0	0	0	0	0	0	30,556
Quantity of RDT&E Articles	0	0	0	3	0	0	0	0		

Note: EMD activities are reflected in PE#604441F.  
 FY97 includes \$3.7M that will be re-programmed to PE #604441F to continue MSTI on-orbit operations and program support.  
 For FY97 \$3.99M will be reprogrammed from SBIRS Low (BPAC 640007) to Cobra Brass (BPAC 640008) but not reflected in above numbers.

**(U) A. Mission Description and Budget Item Justification**

(U) The purpose is to develop a system to provide increased performance to meet requirements in US Space Command's Capstone Requirements Document. The system's primary mission is to provide initial warning of a ballistic missile attack on the US, its deployed forces or its allies. The Space-Based Infrared System (SBIRS) will incorporate new technologies that would enhance detection, improve reporting of ICBM, SLBM and tactical ballistic missiles, and provide critical mid-course tracking and discrimination data for national and theater missile defense. The system will consist of satellites in Geosynchronous Orbits (GEO), Highly Elliptical Orbits (HEO) and Low Earth Orbits (LEO) and an integrated, centralized ground station serving all space elements of the SBIRS system, as well as the Defense Support Program (DSP). PE #305911F funds DSP and PE #604441F funds SBIRS Engineering and Manufacturing Development activities.

(U) This PE funds the SBIRS Demonstration/Validation activities: SBIRS Low and Cobra Brass (CB). SBIRS Low is Dem/Val effort for the LEO component of SBIRS; CB will provide data primarily for DIA/CMO, and secondarily for the GEO and HEO components. This program is in the Budget Activity 4, Demonstration and Validation, because it funds the risk reduction and an advanced technology demonstration system.

**(U) Acquisition Strategy**

(U) The SBIRS program is managed through a single consolidated System Program Office (SPO) at the Space and Missile Systems Center, Los Angeles Air Force Base, CA. The SBIRS Low Flight Demonstration System (FDS) acquisition plan was approved in Aug 92. The Flight Demonstration System (FDS) contract was awarded to TRW in May 95, and the two FDS satellites are scheduled to be launched in FY99. In order to maintain competition for the EMD phase of the program, a second Dem/Val contract was competitively awarded (3 Sep 96) to Boeing to work on an alternative design concept and to demonstrate that concept on orbit in FY99.

(U) Cobra Brass, a sensor to explore the utility of staring, fast framing multi-spectral electro-optical sensors for Theater Missile Defense (TMD), Technical Intelligence (TI), and Battlespace Characterization (BSC) missions is currently being developed by Sandia National Laboratory, Albuquerque, NM. The CB will be flown on a classified host satellite.

UNCLASSIFIED

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>February 1997</b>		
<b>BUDGET ACTIVITY</b> <b>4 - Demonstration and Validation</b>	<b>PE NUMBER AND TITLE</b> <b>0603441F Space Based IR Arch(Em/Val) (Space)</b>			
<b>(U) B. <u>Program Change Summary (\$ in Thousands)</u></b>				
	<u>FY 1996</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>
(U) Previous President's Budget (FY97 PB)	199,663	120,151	122,212	131,254
(U) Appropriated Value		249,151		
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions/adds		-5,793		
b. SBIR		-5,826		
c. Omnibus or Other Above Threshold Reprogram	49,773			
d. Below Threshold Reprogramming				
(U) Adjustments to Budget Years Since FY97 PB			100,189	-4,769
(U) Current Budget Submit/President's Budget	249,436	237,532	222,401	126,485
<b>(U) Change Summary Explanation:</b>				
Funding: FY96-98 increases fund a competitive SBIRS Low Altitude Demonstration System (LADS), and a more robust Flight Demonstration System (FDS) test program.				
FY97 decreases fundCongressionly mandated general reductions.				
FY99 decrease reflects an earlier-than-planned transition of SBIRS Low from thDem/Val phase to the pre-EMD phase to support National Missile Defense.				
Schedule: No Changes				
Technical: No Changes				
<b>(U) C. <u>Other Program Funding Summary (\$ in Thousands)</u></b>				
Not applicable				
<b><u>Related RDT&amp;E:</u></b>				
(U) PE #604441F - SBIRS EMD				
(U) PE #305911F - DSP				

UNCLASSIFIED

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>										DATE <b>February 1997</b>																																																																																																																																									
<b>BUDGET ACTIVITY</b> <b>4 - Demonstration and Validation</b>					<b>PE NUMBER AND TITLE</b> <b>0603441F Space Based IR Arch(Dem/Val) (Space)</b>																																																																																																																																														
<p><b>(U) D. <u>Schedule Profile</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;"></th> <th style="width: 5%;"></th> <th colspan="3" style="text-align: center;"><u>FY 1996</u></th> <th style="width: 5%;"></th> <th colspan="3" style="text-align: center;"><u>FY 1997</u></th> <th style="width: 5%;"></th> <th colspan="3" style="text-align: center;"><u>FY 1998</u></th> <th style="width: 5%;"></th> <th colspan="3" style="text-align: center;"><u>FY 1999</u></th> </tr> <tr> <td></td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> </tr> </thead> <tbody> <tr> <td>(U) SBIRS Low FDS Preliminary Design Review (PDR)</td> <td style="text-align: center;">X</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) SBIRS Low FDS Critical Design Review (CDR)</td> <td></td><td></td><td></td><td></td><td style="text-align: center;">X</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) Cobra Brass Launch (classified)</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) SBIRS Low FDS Launch</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td style="text-align: center;">X</td><td></td> </tr> <tr> <td>(U) SBIRS Low LADS Flight Rediness Review (FRR)</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td style="text-align: center;">X</td><td></td><td></td><td></td> </tr> <tr> <td>(U) SBIRS Low LADS Launch</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td style="text-align: center;">X</td> </tr> </tbody> </table>														<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) SBIRS Low FDS Preliminary Design Review (PDR)	X																(U) SBIRS Low FDS Critical Design Review (CDR)					X												(U) Cobra Brass Launch (classified)																	(U) SBIRS Low FDS Launch															X		(U) SBIRS Low LADS Flight Rediness Review (FRR)													X				(U) SBIRS Low LADS Launch																X
		<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) SBIRS Low FDS Preliminary Design Review (PDR)	X																																																																																																																																																		
(U) SBIRS Low FDS Critical Design Review (CDR)					X																																																																																																																																														
(U) Cobra Brass Launch (classified)																																																																																																																																																			
(U) SBIRS Low FDS Launch															X																																																																																																																																				
(U) SBIRS Low LADS Flight Rediness Review (FRR)													X																																																																																																																																						
(U) SBIRS Low LADS Launch																X																																																																																																																																			
<i>Page 3 of 13 Pages</i>						Exhibit R-2 (PE 0603441F)																																																																																																																																													

UNCLASSIFIED

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>								DATE <b>February 1997</b>		
BUDGET ACTIVITY <b>4 - Demonstration and Validation</b>				PE NUMBER AND TITLE <b>0603441F Space Based IR Arch(Dem/Val) (Space)</b>				PROJECT <b>0007</b>		
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
0007 SBIRS Low	233,825	230,747	219,441	126,485	94,417	94,428	0	0	0	1,292,547
Quantity of RDT&E Articles				3						
<p>Note: \$3.99M was moved from SBIR Low (BPAC 640007) to Cobra Brass (BPAC 640008) but not reflected in above numbers.</p> <p><b>(U) A. <u>Mission Description and Budget Item Justification</u></b>            (U) SBIRS Low represents the Low Earth Orbit (LEO) component of the Space Based InfraRed System (SBIRS). The objective SBIRS LEO constellation of Low-earth orbiting satellites will provide global, below- and above-the-horizon access to strategic and tactical ballistic missiles in boost, post-boost, and midcourse phases of flight, and also track missile targets during reentry. LEO will support the four SBIRS mission areas of Missile Warning, Missile Defense, Technical Intelligence, and Battle Space Characterization.</p> <p><b>(U) <u>Acquisition Strategy</u></b>            (U) The GEO component of the SBIRS program is a pilot for acquisition streamlining. For the GEO component, the traditional Defense Acquisition Board (DAB) documentation for an ACAT ID program was consolidated into a Single Acquisition and Management Plan (SAMP).            (U) While SBIRS Low and Cobra Brass are part of the overall SBIRS, there are on-going contracts for each of these efforts. The SBIRS Low Flight Demonstration System (FDS) acquisition plan was approved in Aug 92. The streamlined acquisition program established by the SBIRS GEO component pre-EMD phase will be used by SBIRS Low when it enters EMD. The existing SBIRS Single Acquisition Management Plan (SAMP) will be updated to reflect the LEO component.            (U) The developing organization for the SBIRS Low FDS satellites is the Air Force Space and Missile Center, Los Angeles AFB, CA. On 2 May 95, the FDS flyer contract was awarded to TRW, Redondo Beach, CA, to design and build two FDS satellites to be launched in FY99. Boeing North America, formerly Rockwell International Space Systems Division, Downey, CA, was awarded an FDS non-flyer contract. On 3 Sep 96, Boeing North America, Downey, CA, was awarded a competitive Dem/Val contract as well.            (U) The FDS Non-flyer contract with Boeing was terminated in Dec 1996 in favor of the competitive Dem/Val contract            (U) Pre-EMD activities will begin in late FY99 with up to two pre-EMD study contracts. The purpose of pre-EMD is to develop specifications and designs for the SBIRS LEO EMD phase. This period will be used to re-optimize the SBIRS HEO, GEO, LEO constellations and to revalidate the AFSPC Operational Requirements Document. Pre-EMD contractors will compete for an EMD contract to be awarded in FY01. The same streamlined acquisition approach being used currently for the GEO EMD will be used as a baseline for the LEO EMD. First launch of the operational constellation will occur in FY04.</p>										
Project 0007			Page 4 of 13 Pages				Exhibit R-2 (PE 0603441F)			

**UNCLASSIFIED**

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>February 1997</b>
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
<b>4 - Demonstration and Validation</b>	<b>0603441F Space Based IR Arch(tem/Val) (Space)</b>	<b>0007</b>
<u>(U) FY 1996 (\$ in Thousands)</u>		
– (U) \$96,862	Continue SBIRS Low FDS satellite and ground segment development.	
– (U) \$2,370	Continue work for non-flying contractor.	
– (U) \$20,000	Add Long Wave Infrared (LWIR) to FDS	
– (U) \$65,000	Schedule Recovery	
– (U) \$10,000	LEO Tech Risk Mitigation	
– (U) \$13,249	Program office activities.	
– (U) \$1,700	Space-Based Visible (SBV)	
– (U) \$9,644	Simulation, Discrimination, and computer support.	
– (U) \$15,000	Low Altitude Demonstration System (LADS)	
– (U) \$233,825	Total	
<u>(U) FY 1997 (\$ in Thousands)</u>		
– (U) \$104,164	Continue SBIRS Low FDS satellite and ground segment development.	
– (U) \$96,600	Low Altitude Demonstration System (LADS)	
– (U) \$4,400	Technologies	
– (U) \$13,293	Program office activities.	
– (U) \$1,400	Space-Based Visible (SBV)	
– (U) \$3,200	Simulation, Discrimination, and computer support.	
– (U) \$3,700	Transfer to PE #604441F	
– (U) \$3,990	Transfer to BPAC 640008, Cobra Brass	
– (U) \$230,747	Total	
<u>(U) FY 1998 (\$ in Thousands)</u>		
– (U) \$108,521	Continue SBIRS Low FDS satellite and ground segment development	
– (U) \$84,900	Low Altitude Demonstration System (LADS)	
– (U) \$10,000	Technologies	
– (U) \$12,700	Program office activities.	
– (U) \$3,320	Simulation, Discrimination, and computer support.	
– (U) \$219,441	Total	
Project 0007	<i>Page 5 of 13 Pages</i>	Exhibit R-2 (PE 0603441F)

UNCLASSIFIED

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>February 1997</b>																																																		
<b>BUDGET ACTIVITY</b> <b>4 - Demonstration and Validation</b>	<b>PE NUMBER AND TITLE</b> <b>0603441F Space Based IR Arch(Dem/Val) (Space)</b>	<b>PROJECT</b> <b>0007</b>																																																		
<p>(U) <u>FY 1999 (\$ in Thousands)</u></p> <ul style="list-style-type: none"> <li>– (U) \$51,100 Continue SBIRS Low FDS satellite and ground segment development</li> <li>– (U) \$35,800 Low Altitude Demonstration System (LADS)</li> <li>– (U) \$10,000 Technologies</li> <li>– (U) \$15,000 Targets</li> <li>– (U) \$13,185 Program office activities.</li> <li>– (U) \$1,400 Simulation, Discrimination, and computer support.</li> <li>– (U) \$126,485 Total</li> </ul>																																																				
<p>(U) <b><u>B. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 10%; text-align: right;"><u>FY 1996</u></th> <th style="width: 10%; text-align: right;"><u>FY 1997</u></th> <th style="width: 10%; text-align: right;"><u>FY 1998</u></th> <th style="width: 10%; text-align: right;"><u>FY 1999</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget (FY97)</td> <td style="text-align: right;">184,052</td> <td style="text-align: right;">113,221</td> <td style="text-align: right;">119,227</td> <td style="text-align: right;">131,254</td> </tr> <tr> <td>(U) Appropriated Value</td> <td></td> <td style="text-align: right;">242,221</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">a. Cong Gen Reductions/adds</td> <td></td> <td style="text-align: right;">-5,648</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">b. SBIR</td> <td></td> <td style="text-align: right;">-5,826</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">c. Omnibus or Other Above Threshold Reprogram</td> <td style="text-align: right;">49,773</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">d. Below Threshold Reprogramming</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY97 PB</td> <td></td> <td></td> <td style="text-align: right;">100,214</td> <td style="text-align: right;">-4,769</td> </tr> <tr> <td>(U) Current Budget Submit/President's Budget</td> <td style="text-align: right;">233,825</td> <td style="text-align: right;">230,747</td> <td style="text-align: right;">219,441</td> <td style="text-align: right;">126,485</td> </tr> </tbody> </table>				<u>FY 1996</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	(U) Previous President's Budget (FY97)	184,052	113,221	119,227	131,254	(U) Appropriated Value		242,221			(U) Adjustments to Appropriated Value					a. Cong Gen Reductions/adds		-5,648			b. SBIR		-5,826			c. Omnibus or Other Above Threshold Reprogram	49,773				d. Below Threshold Reprogramming					(U) Adjustments to Budget Years Since FY97 PB			100,214	-4,769	(U) Current Budget Submit/President's Budget	233,825	230,747	219,441	126,485
	<u>FY 1996</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>																																																
(U) Previous President's Budget (FY97)	184,052	113,221	119,227	131,254																																																
(U) Appropriated Value		242,221																																																		
(U) Adjustments to Appropriated Value																																																				
a. Cong Gen Reductions/adds		-5,648																																																		
b. SBIR		-5,826																																																		
c. Omnibus or Other Above Threshold Reprogram	49,773																																																			
d. Below Threshold Reprogramming																																																				
(U) Adjustments to Budget Years Since FY97 PB			100,214	-4,769																																																
(U) Current Budget Submit/President's Budget	233,825	230,747	219,441	126,485																																																
<p>(U) Change Summary Explanation:</p> <p style="padding-left: 20px;">Funding: FY96-98 increases fund a competitive SBIRS Low Altitude Demonstration System (LADS), and a more robust Flight Demonstration System (FDS) test program.</p> <p style="padding-left: 20px;">FY97 decreases fund Congressionally mandated general reductions</p> <p style="padding-left: 20px;">FY99 decrease reflects the earlier-than-planned transition of SBIRS Low from the Dem/Val phase to the pre-EMD phase to support National Missile Defense.</p> <p style="padding-left: 20px;">Schedule: Not Applicable</p> <p style="padding-left: 20px;">Technical: Not Applicable</p>																																																				
<p>(U) <b><u>C. Other Program Funding Summary (\$ in Thousands)</u></b></p> <p>Not Applicable</p>																																																				
<p><b><u>Related RDT&amp;E:</u></b></p> <p>(U) PE #604441F - SBIRS EMD</p> <p>(U) PE #305911F - DSP</p>																																																				
<p>Project 0007</p>																																																				

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)												DATE <b>February 1997</b>							
BUDGET ACTIVITY <b>4 - Demonstration and Validation</b>						PE NUMBER AND TITLE <b>0603441F Space Based IR ArchDem/Val) (Space)</b>						PROJECT <b>0007</b>							
<b>(U) D. <u>Schedule Profile</u></b>																			
		<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) SBIRS Low FDS PDR	X																		
(U) SBIRS Low FDS CDR					X														
(U) SBIR Low FDS Launch																	X		
(U) LADS FlightRediness Review (FRR)													X						
(U) LADS Launch																	X		

**UNCLASSIFIED**

<b>RDT&amp;E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)</b>										DATE <b>February 1997</b>	
BUDGET ACTIVITY <b>4 - Demonstration and Validation</b>					PE NUMBER AND TITLE <b>0603441F Space Based IR Arch(Em/Val) (Space)</b>					PROJECT <b>0007</b>	
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>					<u>FY 1996</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>			
(U) FDS satellite and ground segment					\$96,862	108,154	108,521	51,100			
(U) Non-flying contractor					2,370	0	0	0			
(U) Add LWIR to FDS					20,000	0	0	0			
(U) Schedule Recovery					65,000	0	0	0			
(U) Technologies					10,000	4,400	10,000	10,000			
(U) Program office activities					13,249	13,293	12,700	13,185			
(U) Space-Based Visible (SBV)					1,700	1,400	0	0			
(U) Sim., Discrim., & computer support					9,644	3,200	3,320	1,400			
(U) Targets					0	0	0	15,000			
(U) Low Altitude Demonstration System					15,000	100,300	84,900	35,800			
(U) Total					233,825	230,747	219,441	126,485			
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>Performing Organizations:</b>											
Contractor or Government	Contract Method/Type	Award or Obligation Date	Performing Activity	Project Office	Total Prior to FY 1996	Budget FY 1996	Budget FY 1997	Budget FY 1998	Budget FY 1999	Budget to Complete	Total Program
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>FY 1996</u>	<u>FY 1996</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>											
FDS - TRW*	CPAF	May 95	521,114	513,114	156,624	185,239	91,600	105,000	43,600	28,200	610,263
SETA Support	Various	Various				1,504	1,664	1,364	1,364	2,728	8,624
SPO Support	N/A	N/A				11,731	11,628	11,290	11,765	25,100	71,514
Misc. Contracts	Various	Various				9,981	19,055	10,187	29,356	112,117	180,696
Non-Flyer - RI	CPAF	May 95	130,643	130,643	128,273	2,370	0	0	0	0	130,643
LADS - Boeing	CPAF	Sep 96	TBD	TBD	0	15,000	98,400	83,600	32,000	2,700	231,700
* EAC does not include award fee and performance incentive											
<u>Support and Management Organizations</u>											
Aerospace		Various				8,307	8,000	8,400	8,000	8,400	59,107
Project 0007					Page 8 of 13 Pages				Exhibit R-3 (PE 0603441F)		

UNCLASSIFIED

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE	
										February 1997	
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT	
<b>4 - Demonstration and Validation</b>					<b>0603441F Space Based IR Arch(tem/Val) (Space)</b>					<b>0007</b>	
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>Test and Evaluation Organizations</u>											
Not Applicable											
<b>(U) B. <u>Budget Acquisition History and Planning Information Continued (\$ in Thousands)</u></b>											
<b>Government Furnished Property:</b> Not Applicable.											
Subtotal Product Development					284,897	225,825	222,347	211,441	118,085	170,845	1,233,440
Subtotal Support and Management					8,307	8,000	8,400	8,000	8,400	18,000	59,107
Subtotal Test and Evaluation					0	0	0	0	0		
Total Project					293,204	233,825	230,747	219,441	126,485	188,845	1,292,547
Note: Where applicable, totals do not include funds previous to FY95 which all came from outside this PE											

**UNCLASSIFIED**

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>								DATE <b>February 1997</b>		
<b>BUDGET ACTIVITY</b> <b>4 - Demonstration and Validation</b>				<b>PE NUMBER AND TITLE</b> <b>0603441F Space Based IR ArchDem/Val) (Space)</b>				<b>PROJECT</b> <b>0008</b>		
<i>COST (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
0008 Cobra Brass	15,611	6,785	2,960	0	0	0	0	0	0	30,556
Quantity of RDT&E Articles										
<p><b>(U) A. <u>Mission Description and Budget Item Justification</u></b></p> <p>(U) The Cobra Brass (CB) Program is a DIA/CMO (Central MASINT Office) Research and Development program to explore the utility of staring, fast framing, multi-spectral electro-optical sensors. Cobra Brass is a sensor package designed by the Sandia National Laboratory to fly on a classified host satellite. CB has been combined into the SBIRS program as a result of the Feb 95 DAE review. This approach represents a significant departure from the traditional approach of scanning, slow framing, single band sensors which have traditionally been used for Tactical Warning and Attack Assessment (TW/AA).</p> <p>(U) Previous CB sensors have demonstrated the ability of this technology to contribute to both the Theater Missile Defense (TMD), Technical Intelligence (TI), and Battlespace Characterization (BSC) missions. A major emphasis of this program will be to increase the timeliness of sensor tasking and reporting. This will allow CB data to be processed in real-time through the existing theater infrastructure. CB will also support the GEO and HEO component of the SBIRS.</p> <p>(U) <u>FY 1996 (\$ in Thousands)</u></p> <ul style="list-style-type: none"> <li>- (U) \$11,211 Payload.</li> <li>- (U) \$1,000 Test Unit.</li> <li>- (U) \$2,900 Ground Station Build.</li> <li>- (U) \$500 Satellite Integration &amp; Checkout</li> <li>- (U) \$15,611 Total</li> </ul> <p>(U) <u>FY 1997 (\$ in Thousands)</u></p> <ul style="list-style-type: none"> <li>- (U) \$5,175 Payload.</li> <li>- (U) \$1,500 Satellite Integration &amp; Checkout.</li> <li>- (U) \$4,100 Ground Station Build.</li> <li>- (U) -\$3,990 To be transfered from BPAC 0007, SBIRS Low</li> <li>- (U) \$6,785 Total</li> </ul> <p>(U) <u>FY 1998 (\$ in Thousands)</u></p> <ul style="list-style-type: none"> <li>- (U) \$2,960 Ground Station testing.</li> <li>- (U) \$2,960 Total</li> </ul>										
Project 0008			Page 10 of 13 Pages				Exhibit R-2 (PE 0603441F)			

UNCLASSIFIED

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>February 1997</b>																																																																																																																																							
<b>BUDGET ACTIVITY</b> <b>4 - Demonstration and Validation</b>	<b>PE NUMBER AND TITLE</b> <b>0603441F Space Based IR Arch(Em/Val) (Space)</b>	<b>PROJECT</b> <b>0008</b>																																																																																																																																							
<p>(U) <u>FY 1999 (\$ in Thousands)</u>                  – (U) \$0                      Not applicable</p>																																																																																																																																									
<p>(U) <b><u>B. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;"></th> <th style="text-align: center;"><u>FY 1996</u></th> <th style="text-align: center;"><u>FY 1997</u></th> <th style="text-align: center;"><u>FY 1998</u></th> <th style="text-align: center;"><u>FY 1999</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: right;">15,920</td> <td style="text-align: right;">6,930</td> <td style="text-align: right;">2,985</td> <td style="text-align: right;">0</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: right;">15,920</td> <td style="text-align: right;">6,930</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    a. Cong Gen Reductions</td> <td style="text-align: right;">-309</td> <td style="text-align: right;">-145</td> <td></td> <td></td> </tr> <tr> <td>    b. SBIR</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    d. Below Threshold Reprogramming</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY97 PB</td> <td></td> <td></td> <td style="text-align: right;">-25</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/President's Budget</td> <td style="text-align: right;">15,611</td> <td style="text-align: right;">6,785</td> <td style="text-align: right;">2,960</td> <td style="text-align: right;">0</td> </tr> </tbody> </table> <p>(U) Change Summary Explanation:                  Funding: Not Applicable                  Schedule: Not Applicable                  Technical: Not Applicable</p> <p>(U) <b><u>C. Other Program Funding Summary (\$ in Thousands)</u></b> Not Applicable</p> <p><b><u>Related RDT&amp;E:</u></b>                  (U) PE #604441F - SBIRS EMD                  (U) PE #305911F - DSP</p> <p>(U) <b><u>D. Schedule Profile</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;"></th> <th colspan="4" style="text-align: center;"><u>FY 1996</u></th> <th colspan="4" style="text-align: center;"><u>FY 1997</u></th> <th colspan="4" style="text-align: center;"><u>FY 1998</u></th> <th colspan="4" style="text-align: center;"><u>FY 1999</u></th> </tr> <tr> <td></td> <td style="text-align: center;">1</td><td style="text-align: center;">2</td><td style="text-align: center;">3</td><td style="text-align: center;">4</td> <td style="text-align: center;">1</td><td style="text-align: center;">2</td><td style="text-align: center;">3</td><td style="text-align: center;">4</td> <td style="text-align: center;">1</td><td style="text-align: center;">2</td><td style="text-align: center;">3</td><td style="text-align: center;">4</td> <td style="text-align: center;">1</td><td style="text-align: center;">2</td><td style="text-align: center;">3</td><td style="text-align: center;">4</td> </tr> </thead> <tbody> <tr> <td>(U) Payload Consent to Ship Decision</td> <td></td><td></td><td></td><td></td> <td></td><td style="text-align: center;">X</td><td></td><td></td> <td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) Grd Station Build 1 Testing Complete at Sandia</td> <td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td> <td></td><td></td><td style="text-align: center;">X</td><td></td> <td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) Grd Station Build 1 Installed at Ground Site</td> <td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td style="text-align: center;">X</td> <td></td><td></td><td></td><td></td> </tr> </tbody> </table> <p>Project 0008</p>				<u>FY 1996</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	(U) Previous President's Budget	15,920	6,930	2,985	0	(U) Appropriated Value	15,920	6,930			(U) Adjustments to Appropriated Value					a. Cong Gen Reductions	-309	-145			b. SBIR					c. Omnibus or Other Above Threshold Reprogram					d. Below Threshold Reprogramming					(U) Adjustments to Budget Years Since FY97 PB			-25		(U) Current Budget Submit/President's Budget	15,611	6,785	2,960	0		<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) Payload Consent to Ship Decision						X											(U) Grd Station Build 1 Testing Complete at Sandia											X						(U) Grd Station Build 1 Installed at Ground Site												X				
	<u>FY 1996</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>																																																																																																																																					
(U) Previous President's Budget	15,920	6,930	2,985	0																																																																																																																																					
(U) Appropriated Value	15,920	6,930																																																																																																																																							
(U) Adjustments to Appropriated Value																																																																																																																																									
a. Cong Gen Reductions	-309	-145																																																																																																																																							
b. SBIR																																																																																																																																									
c. Omnibus or Other Above Threshold Reprogram																																																																																																																																									
d. Below Threshold Reprogramming																																																																																																																																									
(U) Adjustments to Budget Years Since FY97 PB			-25																																																																																																																																						
(U) Current Budget Submit/President's Budget	15,611	6,785	2,960	0																																																																																																																																					
	<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) Payload Consent to Ship Decision						X																																																																																																																																			
(U) Grd Station Build 1 Testing Complete at Sandia											X																																																																																																																														
(U) Grd Station Build 1 Installed at Ground Site												X																																																																																																																													
<i>Page 11 of 13 Pages</i>		Exhibit R-2 (PE 0603441F)																																																																																																																																							

**UNCLASSIFIED**

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>											DATE <b>February 1997</b>					
BUDGET ACTIVITY <b>4 - Demonstration and Validation</b>						PE NUMBER AND TITLE <b>0603441F Space Based IR Arch(Dem/Val) (Space)</b>						PROJECT <b>0008</b>				
<b>(U) D. <u>Schedule Profile</u></b>	<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
<b>(U) CB Launch (classified)</b>																

UNCLASSIFIED

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 1997				
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
<b>4 - Demonstration and Validation</b>				<b>0603441F Space Based IR Arch(tem/Val) (Space)</b>				<b>0008</b>			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
				<u>FY 1996</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>				
(U) Payload				11,211	5,175	0					
(U) Ground Station				2,900	4,100	2,985					
(U) Test Unit				1,000	0	0					
(U) Satellite I&CO				500	1,500	0					
(U) Adjustment					-3,990	-25					
(U) Total				15,611	6,785	2,960	0				
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>Performing Organizations:</b>											
Contractor or Government	Contract Method/Type	Award or Obligation	Performing Activity	Project Office	Total	Budget	Budget	Budget	Budget	Budget to Complete	Total Program
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>FY 1996</u>	<u>FY 1996</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>		
<u>Product Development Organizations</u>											
Sandia Nat'l Labs	Various	Various			5,200	15,611	10,775	2,960	0	0	30,556
<u>Support and Management Organizations</u>											
Not Applicable											
<u>Test and Evaluation Organizations</u>											
Not Applicable											
<b>Government Furnished Property: Not Applicable</b>											
Subtotal Product Development					5,200	15,611	10,775	2,960	0	0	30,556
Subtotal Support and Management					0	0	0	0	0	0	
Subtotal Test and Evaluation					0	0	0	0	0	0	
Adjustment							-3,990				
Project Total					5,200	15,611	6,785	2,960	0	0	30,556
Project 0008											
Page 13 of 13 Pages											
Exhibit R-3 (PE 0603441F)											

**THIS PAGE INTENTIONALLY LEFT BLANK**