PE NUMBER: 0604441F
PE TITLE: Space Based Infrared Systems (SBIRS) High EMD

Exhibit R-2, RDT&E Budget Item Justification	DATE: May 2009
BUDGET ACTIVITY: 05 System Development and Demonstration (SDD)	PE NUMBER AND TITLE: 0604441F Space Based Infrared Systems (SBIRS) High EMD

	Cost ($ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
	Total Program Element (PE) Cost	583.305	542.411	512.642	0.000	0.000	0.000	0.000	0.000	0.000	7,799.654
3616	SBIRS High Element EMD	583.305	542.411	512.642	0.000	0.000	0.000	0.000	0.000	0.000	7,799.654

(U) A. Mission Description and Budget Item Justification

(U) The Space-Based Infrared Systems (SBIRS) primary mission is to provide initial warning of a ballistic missile attack on the US, its deployed forces, and its allies. SBIRS will incorporate new technologies, as well as technology needs forecasting, to enhance detection and improve reporting of intercontinental ballistic missile launches, submarine launched ballistic missile launches, and tactical ballistic missile launches. SBIRS supports Missile Defense, Battlespace Awareness, and Technical Intelligence missions by providing reliable, accurate, and timely data to Unified Combatant Commanders, Joint Task Force (JTF) Commanders, the intelligence community, and other users. SBIRS provides increased detection and tracking performance in order to meet requirements in US Strategic Command's Capstone Requirements Document and Air Force Space Command's Operational Requirements Document. SBIRS will consist of satellites in Geosynchronous Earth Orbit (GEO), payloads hosted on satellites in Highly Elliptical Orbit (HEO), an integrated centralized ground station serving all SBIRS space elements, Defense Support Program (DSP) satellites, and other related support activities. The HEO-1 payload is accepted and certified for Integrated Tactical Warning/Attack Assessment (ITW/AA) missile warning operations. The HEO-2 payload is in orbit and is conducting on-orbit checkout and testing. HEO-2 is scheduled for certification and subsequent operations in late summer 2009.

(U) This program is assigned to Budget Activity 5, System Development and Demonstration (SDD), because it funds the development activities for the SBIRS High program.

(U) B. Program Change Summary ($ in Millions)

		FY 2008	FY 2009	FY 2010
(U)	Previous President's Budget	583.317	529.771	443.268
(U)	Current PBR/President's Budget	583.305	542.411	512.642
(U)	Total Adjustments	-0.012	12.640	
(U)	Congressional Program Reductions	-0.012	-0.887	
	Congressional Rescissions		-1.473	
	Congressional Increases		15.000	
	Reprogrammings			
	SBIR/STTR Transfer			

(U) Significant Program Changes:

FY09: Congressional add of $15M for HEO Ground Integration

FY10: Additional funds added for GEO-1 & 2 development and test program completion

Exhibit R-2a, RDT&E Project Justification

DATE: May 2009

BUDGET ACTIVITY: 05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE: 0604441F Space Based Infrared Systems (SBIRS) High EMD

PROJECT NUMBER AND TITLE: 3616 SBIRS High Element EMD

Cost ($ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
3616 SBIRS High Element EMD	583.305	542.411	512.642	0.000	0.000	0.000	0.000	0.000	0.000	7,799.654
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

(U) A. Mission Description and Budget Item Justification

(U) The Space-Based Infrared Systems (SBIRS) primary mission is to provide initial warning of a ballistic missile attack on the US, its deployed forces, and its allies. SBIRS will incorporate new technologies, as well as technology needs forecasting, to enhance detection and improve reporting of intercontinental ballistic missile launches, submarine launched ballistic missile launches, and tactical ballistic missile launches. SBIRS supports Missile Defense, Battlespace Awareness, and Technical Intelligence missions by providing reliable, accurate, and timely data to Unified Combatant Commanders, Joint Task Force (JTF) Commanders, the intelligence community, and other users. SBIRS provides increased detection and tracking performance in order to meet requirements in US Strategic Command's Capstone Requirements Document and Air Force Space Command's Operational Requirements Document. SBIRS will consist of satellites in Geosynchronous Earth Orbit (GEO), payloads hosted on satellites in Highly Elliptical Orbit (HEO), an integrated centralized ground station serving all SBIRS space elements, Defense Support Program (DSP) satellites, and other related support activities. The HEO-1 payload is accepted and certified for Integrated Tactical Warning/Attack Assessment (ITW/AA) missile warning operations. The HEO-2 payload is in orbit and is conducting on-orbit checkout and testing. HEO-2 is scheduled for certification and subsequent operations in late summer 2009.

(U) This program is assigned to Budget Activity 5, System Development and Demonstration (SDD), because it funds the development activities for the SBIRS High program.

(U) B. Accomplishments/Planned Program ($ in Millions)	FY 2008	FY 2009	FY 2010
(U) Continue EMD contracts for Space and Ground segment development (includes GFE, continued GEO development, GEO 1&2 integration, assembly and test, design activities for GEO block upgrades, proposal preparation , HEO integration and test, HEO message certification, Ground System Development, System Engineering and Program Management, Host program office support, Technical Intelligence activities, Data Exploitation activities, Combined Task Force (CTF) support activities, continuation of systems integration and test studies, and related support activities).	528.414	487.125	468.003
(U) Continue Program Office and related support activities to include SETA and Systems Engineering and Integration.	17.379	23.186	19.768
(U) Continue technical analysis and independent verification and validation of contractor.	37.512	32.100	24.871
(U) Total Cost	583.305	542.411	512.642

Exhibit R-2a, RDT&E Project Justification		DATE May 2009
BUDGET ACTIVITY 05 System Development and Demonstration (SDD)	PE NUMBER AND TITLE 0604441F Space Based Infrared Systems (SBIRS) High EMD	PROJECT NUMBER AND TITLE 3616 SBIRS High Element EMD

(U) C. Other Program Funding Summary ($ in Millions)

	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total Cost
(U) Other Procurement (PE 0305915F, BA-03,)	3.952	80.168	34.440	0.000	0.000	0.000	0.000	0.000	0.000	118.560
(U) Missile Procurement (PE 0305915F, BA-05, P-30)	395.310	1712.976	466.456	0.000	0.000	0.000	0.000	0.000	0.000	2,574.742

(U) D. Acquisition Strategy

The pre-SDD SBIRS contracts were competed in full and open competition. Two contracts were awarded to Lockheed/Loral/Aerojet and Hughes/TRW in 1995 for the pre-SDD phase. A single contract was awarded to Lockheed Martin in 1996 for the SDD phase.

Exhibit R-3, RDT&E Project Cost Analysis

DATE: May 2009

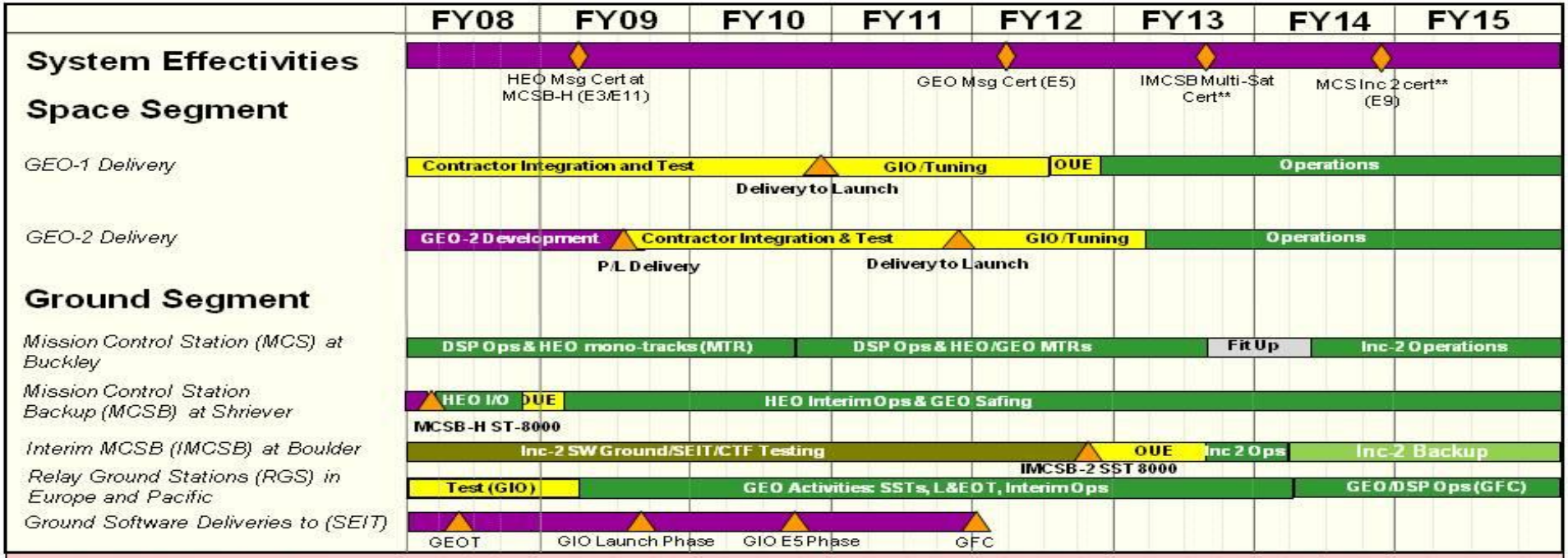
BUDGET ACTIVITY: 05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE: 0604441F Space Based Infrared Systems (SBIRS) High EMD

PROJECT NUMBER AND TITLE: 3616 SBIRS High Element EMD

(U) Cost Categories (Tailor to WBS, or System/Item Requirements) ($ in Millions)	Contract Method & Type	Performing Activity & Location	Total Prior to FY 2008 Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost to Complete	Total Cost	Target Value of Contract
(U) Product Development												
LMMS & Hughes (Pre-SDD)	C/CPFF		159.600							0.000	159.600	159.600
LMMS (SDD)	C/CPAF	Lockheed Martin, Sunnyvale, CA	5,599.922	528.414	Oct-07	487.125	Oct-08	468.003	Oct-09	0.000	7,083.464	7,083.464
SBIRS Pre-SDD Contract Adjustment			4.780							0.000	4.780	4.780
Technology	Various		11.600							0.000	11.600	11.600
Phenomenology	Various		17.350							0.000	17.350	17.350
Sandia Natl Lab (Cobra Brass)	Various		10.000							0.000	10.000	10.000
Subtotal Product Development			5,803.252	528.414		487.125		468.003		0.000	7,286.794	7,286.794
Remarks:												
(U) Support												
Aerospace Corp	Reimbursable Order	Aerospace Corp, El Segundo CA	251.470	37.512	Oct-07	32.100	Oct-08	24.871	Oct-09	0.000	345.953	345.953
Prgm Mgmt Supt	Various	Various	106.574	17.379	Oct-07	23.186	Oct-08	19.768	Oct-09	0.000	166.907	166.907
Subtotal Support			358.044	54.891		55.286		44.639		0.000	512.860	512.860
Remarks:												
(U) Test & Evaluation												
Not Applicable											0.000	
Subtotal Test & Evaluation			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) Management												
											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) Total Cost			6,161.296	583.305		542.411		512.642		0.000	7,799.654	7,799.654

Exhibit R-4, RDT&E Schedule Profile		DATE: May 2009
BUDGET ACTIVITY: 05 System Development and Demonstration (SDD)	PE NUMBER AND TITLE: 0604441F Space Based Infrared Systems (SBIRS) High EMD	PROJECT NUMBER AND TITLE: 3616 SBIRS High Element EMD



GEOT: GEO Early On-Orbit Test
HEOT: HEO Early Orbit Test
OUE: Operational User Evaluation
SEIT: Systems Engineering, Integration, and Test
GFC: GEO Full Capability
HIO: HEO Interim Operations
PCA: Pointing & Control Assembly
GIO: GEO Interim Operations
IMCSB: Interim Mission Control Station Backup
RGS: Relay Ground Station
GEO: Geosynchronous Earth Orbit
HEO: Highly Elliptical Orbit
MCS: Mission Control Station
SST: SBIRS System Test

Concept activities
Design / development
Integration / test
Production / fielding
Operations / sustainment
Key events

**Denotes dates are under review pending the determination of ground delivery/implementation strategy

Exhibit R-4a, RDT&E Schedule Detail		DATE May 2009
BUDGET ACTIVITY **05 System Development and Demonstration (SDD)**	PE NUMBER AND TITLE **0604441F Space Based Infrared Systems (SBIRS) High EMD**	PROJECT NUMBER AND TITLE **3616 SBIRS High Element EMD**

(U) **Schedule Profile**	FY 2008	FY 2009	FY 2010
(U) Delivery of Mission Control Station Backup-HEO (MCSB-H) to SEIT	1Q		
(U) GEO Early On-Orbit Test (GEOT) Software Delivery	2Q		
(U) GEO-1 GEOT-E Software Delivery to Integration	2Q		
(U) GEO-1 SPA Software Item Qualification Test (SIQT) Complete		1Q	
(U) HEO message certification		1Q	
(U) HEO back-up operations		2Q	
(U) GEO-2 Payload delivery to prime for integration with spacecraft		3Q	
(U) GEO Interim Operations (GIO) Software Delivery		4Q	
(U) GEO-2 Acoustic Test Complete			2Q
(U) GEO-2 TVAC Open Door Test Complete			3Q
(U) GEO Satellite 1 Delivery			4Q