PE NUMBER: 0604443F
PE TITLE: Third Generation Infrared Surveillance (3GIRS)

Exhibit R-2, RDT&E Budget Item Justification

DATE: May 2009

BUDGET ACTIVITY: 05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE: 0604443F Third Generation Infrared Surveillance (3GIRS)

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	75.410	0.953	143.169	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
A020	3GIRS	75.410	0.953	143.169	0.000	0.000	0.000	0.000	0.000	Continuing	TBD

(U) A. Mission Description and Budget Item Justification

(U) 3rd Generation Infrared Surveillance (3GIRS) continues risk reduction and maturation of full-earth, Wide Field of View (WFOV) infrared (IR) sensor technology, enabling improved detection sensitivities and faster warning times of new and emerging worldwide missile threats against the U.S., its deployed forces, and its allies. 3GIRS will investigate and mature both space and ground capabilities to process new full-earth sensor data for use across the missile warning, missile defense, battlespace awareness, and technical intelligence mission areas. Sensor test and evaluation efforts in FY10 will include hosting an IR payload prototype on a commercial host, WFOV algorithm development, and planning for integration into existing Space Based Infrared System (SBIRS) ground architecture.

(U) In FY09, Congress transferred $75M from 3GIRS to the Operationally Responsive Space (ORS) program, PE 0604857F, for IR sensor payload development and demonstration. Efforts in 2009 actively continue on the integration of a quarter-earth WFOV IR payload onto a commercial host for on-orbit testing in 2010-2011, WFOV sensor testing, and algorithm development. System Definition activities were discontinued.

(U) In order to reduce schedule and technical risk, 3GIRS will evolve Overhead Persistent Infrared (OPIR) WFOV sensor technology and ground processing capabilities over multiple blocks to achieve full capabilities. Block 0 developed two WFOV sensors in 2008 and will progress WFOV technology maturation activities from prototype sensor development/testing to flight qualified payload development/testing and on-orbit demonstration. Specific Block 0 activities in FY10 include the upgrade of WFOV prototype sensors to flight qualified payloads, payload integration and testing using the Integrated Test Bed satellite simulators, development and testing of WFOV data processing algorithms, delivery of a quarter-earth prototype payload for a commercial host launch in 2010, and the initial phase of the quarter-earth on-orbit demonstration. Block 1 begins in late FY10/early FY11 and will focus on delivering hosted full-earth staring WFOV prototype payloads and ground processing prototypes to mature sensor technology and ground processing algorithms in theater missile warning, missile defense, technical intelligence, and battlespace awareness applications. Potential start of evolution to next generation OPIR is dependent on the outcome of a 2009-2011 Joint AFSPC/NGA OPIR Analysis of Alternatives (AoA) for a future space and ground OPIR architecture. If a future acquisition is initiated to evolve SBIRS High capabilities, it is envisioned to focus on meeting OPIR requirements derived from an in-progress 2009 OPIR ICD and will be based on results from the OPIR AoA.

(U) This program is assigned to Budget Activity 5, System Development and Demonstration (SDD), because it funds the development activities for evolving the SBIRS High next generation of missile warning satellites.

Exhibit R-2, RDT&E Budget Item Justification	DATE May 2009
BUDGET ACTIVITY 05 System Development and Demonstration (SDD)	PE NUMBER AND TITLE 0604443F Third Generation Infrared Surveillance (3GIRS)

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

		FY 2008	FY 2009	FY 2010
(U)	Previous President's Budget	75.410	149.064	145.358
(U)	Current PBR/President's Budget	75.410	0.953	143.169
(U)	Total Adjustments	0.000	-148.111	
(U)	Congressional Program Reductions	0.000	-149.064	
	Congressional Rescissions	0.000		
	Congressional Increases		0.953	
	Reprogrammings			
	SBIR/STTR Transfer			

(U) Significant Program Changes:

Congress reduced the 3GIRS program by the entire FY2009 request of $149.064. Congress transferred $75M to the Operationally Responsive Space (ORS) program, PE 0604857F, for infrared sensor payload development and demonstration. $.953M Congressional add for Advanced Staring Infrared Testbed (ASIRT) technology demonstration.

Exhibit R-2a, RDT&E Project Justification			DATE: May 2009
BUDGET ACTIVITY: 05 System Development and Demonstration (SDD)	PE NUMBER AND TITLE: 0604443F Third Generation Infrared Surveillance (3GIRS)	PROJECT NUMBER AND TITLE: A020 3GIRS	

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
A020 3GIRS	75.410	0.953	143.169	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

(U) A. Mission Description and Budget Item Justification

(U) 3rd Generation Infrared Surveillance (3GIRS) continues risk reduction and maturation of full-earth, Wide Field of View (WFOV) infrared (IR) sensor technology, enabling improved detection sensitivities and faster warning times of new and emerging worldwide missile threats against the U.S., its deployed forces, and its allies. 3GIRS will investigate and mature both space and ground capabilities to process new full-earth sensor data for use across the missile warning, missile defense, battlespace awareness, and technical intelligence mission areas. Sensor test and evaluation efforts in FY10 will include hosting an IR payload prototype on a commercial host, WFOV algorithm development, and planning for integration into existing Space Based Infrared System (SBIRS) ground architecture.

(U) In FY09, Congress transferred $75M from 3GIRS to the Operationally Responsive Space (ORS) program, PE 0604857F, for IR sensor payload development and demonstration. Efforts in 2009 actively continue on the integration of a quarter-earth WFOV IR payload onto a commercial host for on-orbit testing in 2010-2011, WFOV sensor testing, and algorithm development. System Definition activities were discontinued.

(U) In order to reduce schedule and technical risk, 3GIRS will evolve Overhead Persistent Infrared (OPIR) WFOV sensor technology and ground processing capabilities over multiple blocks to achieve full capabilities. Block 0 developed two WFOV sensors in 2008 and will progress WFOV technology maturation activities from prototype sensor development/testing to flight qualified payload development/testing and on-orbit demonstration. Specific Block 0 activities in FY10 include the upgrade of WFOV prototype sensors to flight qualified payloads, payload integration and testing using the Integrated Test Bed satellite simulators, development and testing of WFOV data processing algorithms, delivery of a quarter-earth prototype payload for a commercial host launch in 2010, and the initial phase of the quarter-earth on-orbit demonstration. Block 1 begins in late FY10/early FY11 and will focus on delivering hosted full-earth staring WFOV prototype payloads and ground processing prototypes to mature sensor technology and ground processing algorithms in theater missile warning, missile defense, technical intelligence, and battlespace awareness applications. Potential start of evolution to next generation OPIR is dependent on the outcome of a 2009-2011 Joint AFSPC/NGA OPIR Analysis of Alternatives (AoA) for a future space and ground OPIR architecture. If a future acquisition is initiated to evolve SBIRS High capabilities, it is envisioned to focus on meeting OPIR requirements derived from an in-progress 2009 OPIR ICD and will be based on results from the OPIR AoA.

(U) This program is assigned to Budget Activity 5, System Development and Demonstration (SDD), because it funds the development activities for evolving the SBIRS High next generation of missile warning satellites.

(U) B. Accomplishments/Planned Program ($ in Millions)	FY 2008	FY 2009	FY 2010
(U) Risk reduction activities	50.461	0.953	113.348
(U) Block Engineering & Definition	15.315	0.000	
(U) Block Development	0.000	0.000	8.800
(U) FFRDC, Development Planning, SE/TA, and Systems Engineering and Integration Technical Support	9.634	0.000	21.021

Exhibit R-2a, RDT&E Project Justification		DATE May 2009
BUDGET ACTIVITY 05 System Development and Demonstration (SDD)	PE NUMBER AND TITLE 0604443F Third Generation Infrared Surveillance (3GIRS)	PROJECT NUMBER AND TITLE A020 3GIRS

(U) B. Accomplishments/Planned Program ($ in Millions)

	FY 2008	FY 2009	FY 2010
(U) Total Cost	75.410	0.953	143.169

(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)										

(U) D. Acquisition Strategy

(U) 3GIRS will plan and pursue new capabilities for WFOV sensor and ground processing development using a block approach. Block 0 will upgrade WFOV sensors to flight qualified payloads, develop ground processing algorithms, and culminates in a system level on-orbit demonstration of a quarter-earth WFOV payload proving IR data which will be processed by newly developed algorithms. Block 1 will develop ground processing prototypes and hosted full-earth WFOV prototypes to reduce risk in theater missile warning, missile defense, technical intelligence, and battlespace awareness applications. If a future acquisition is initiated as a result of the OPIR AoA, it will evolve SBIRS High capabilities to meet emerging warfighter requirements.

(U) The program's technology maturation efforts are focused on fostering competition and growing the industrial base to ensure we have ready access to the technology needed to respond in the next decade to new and emerging threats and requirements. The acquisition strategy will evolve current Missile Warning capabilities in response to new JROC-approved requirements since approval of the 1996 SBIRS Operational Requirements Document (ORD). All contracts will be awarded using competitive procedures to the maximum extent possible.

Exhibit R-3, RDT&E Project Cost Analysis

DATE: May 2009

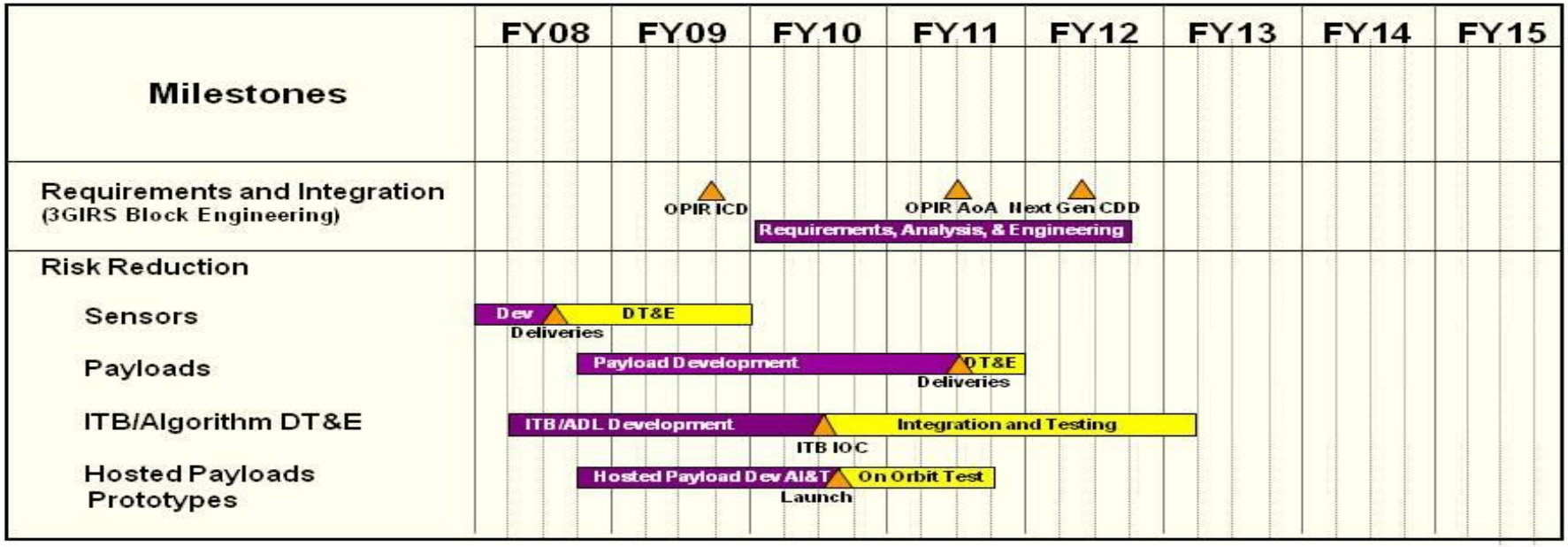
BUDGET ACTIVITY: 05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE: 0604443F Third Generation Infrared Surveillance (3GIRS)

PROJECT NUMBER AND TITLE: A020 3GIRS

(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												
Risk reduction activities	Various	Various	46.450	50.461	Oct-07	0.953	Mar-09	113.348	Oct-09	Continuing	TBD	TBD
Block Engineering & Definition	Various	Various	16.838	15.315	Oct-07	0.000				Continuing	TBD	TBD
Block Development	Various	Various	0.000	0.000		0.000		8.800	Oct-09	Continuing	TBD	TBD
Subtotal Product Development			63.288	65.776		0.953		122.148		Continuing	TBD	TBD
Remarks:												
(U) Support												
Program office, developmental planning, and technical support including federally funded research and development center (FFRDC/SETA)	Various	Space and Missile Center, El Segundo, CA	4.264	9.634	Oct-07	0.000		21.021	Oct-09	Continuing	TBD	TBD
Subtotal Support			4.264	9.634		0.000		21.021		Continuing	TBD	TBD
Remarks:												
(U) Test & Evaluation												
											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			67.552	75.410		0.953		143.169		Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile		DATE: May 2009
BUDGET ACTIVITY: 05 System Development and Demonstration (SDD)	PE NUMBER AND TITLE: 0604443F Third Generation Infrared Surveillance (3GIRS)	PROJECT NUMBER AND TITLE: A020 3GIRS



AI&T: Assembly, Integration & Test
ADL: Algorithm Development Lab
AoA: Analysis of Alternatives
DT&E: Development Test & Evaluation
ICD: Initial Capabilities Document
IOC: Initial Operational Capability
ITB: Integrated Test Bed

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

1

Exhibit R-4a, RDT&E Schedule Detail		DATE May 2009
BUDGET ACTIVITY **05 System Development and Demonstration (SDD)**	PE NUMBER AND TITLE **0604443F Third Generation Infrared Surveillance (3GIRS)**	PROJECT NUMBER AND TITLE **A020 3GIRS**

(U) Schedule Profile	FY 2008	FY 2009	FY 2010
(U) Risk Reduction Sensor Deliveries	2Q		
(U) Risk Reduction Sensors DT&E	3-4Q	1-4Q	
(U) 3rd Generation System Design Reviews (SDR)	4Q		
(U) Commerical Host Flight Demo Contract Award	3Q		
(U) Algorithm DT&E Deliveries	4Q	3Q	2Q
(U) Commerical Host Flight Demo Launch			3Q
(U) ITB IOC			3Q
(U) SE&I/Ground Development Contract Awards			4Q
(U) Hosted Payload Prototype Contract Awards			4Q
(U) Commerical Host Flight Demo			3-4Q

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