

UNCLASSIFIED

PE NUMBER: 0305910F
 PE TITLE: SPACETRACK

Exhibit R-2, RDT&E Budget Item Justification	DATE February 2004
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BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0305910F SPACETRACK
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Cost (\$ in Millions)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost	20.289	104.694	161.838	150.837	213.575	402.513	429.571	Continuing	TBD
4930 Space Based Space Surveillance	10.200	65.752	109.233	84.472	115.357	196.170	204.388	Continuing	TBD
5011 Space Situational Awareness Initiatives	10.089	15.348	12.086	16.222	10.916	9.308	7.593	Continuing	TBD
A008 Sensor Service Life Extension Programs (Sensor SLEPs)	0.000	19.698	31.678	25.211	29.950	9.693	0.000	0.000	116.793
A009 Orbital Deep Space Imager (ODSI)	0.000	3.896	8.841	24.932	57.352	187.342	217.590	Continuing	TBD

FY03: Project 5011, Space Situational Awareness Initiatives, was changed from Project 5010 (same name) to correct an administrative error. This action did not change program content.

FY04: Project A008, Sensor Service Life Extension Programs (Sensor SLEPs), efforts were transferred from Project 5011, Space Situational Awareness Initiatives (this PE), in order to ensure positive tracking for the SLEP work.

FY04: Project A009, Orbital Deep Space Imager (ODSI), activities were transferred from Project 5011, Space Situational Awareness Initiatives (this PE), in order to ensure positive tracking for the ODSI work.

(U) A. Mission Description and Budget Item Justification

The SPACETRACK program element represents a worldwide Space Surveillance Network (SSN) of dedicated, collateral, and contributing electro-optical and radar sensors. The SSN is tasked to provide satellite tracking, 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 Spacetrack PE is organized to achieve Space Situation Awareness (SSA) by upgrading selected SSN sensors, tying sensors together in the information and architecture realm, and deploying new space-based sensors.

The Space Based Space Surveillance (SBSS) project acquires a constellation of satellites to conduct space surveillance. A constellation of space-based space surveillance satellites will provide timely space situational awareness to meet future space control operations. The SBSS is a follow-on to a successful Advanced Concept Technology Demonstration (ACTD) of the Mid-Course Space Experiment/Space Based Visible (MSX/SBV) sensor.

The SSA initiatives are a collection of linked development efforts to accelerate the evolution of the Space Surveillance Network (SSN) and its command and control (C2) infrastructure into an Air Force SSA capability to generate and disseminate the Space Common Operational Picture (Space COP) to the warfighter. SSA initiatives are the critical, enabling projects tying sensor information together to support the SSA required by offensive counterspace and defensive counterspace missions.

The SPACETRACK sensor Service Life Extension Programs (SLEPs) extend the life and upgrade the hardware and software. The SLEPs will improve operability and

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sustainability for space object identification, satellite tracking, and the imaging missions in support of US Strategic Command missions at the Eglin and Haystack radar sites.

The Air Force Space Surveillance System is a dedicated sensor (transferred from the Navy to the Air Force in FY04) that provides uncued detection of earth orbiting objects out to 17,250 miles (Project A008, Sensor Service Life Extension Programs).

The Orbital Deep Space Imager (ODSI) provides imagery of deep space objects for satellite characterization in support of overall battle space awareness.

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

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

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
(U) Previous President's Budget	21.507	118.234	162.262
(U) Current PBR/President's Budget	20.289	104.694	161.838
(U) Total Adjustments	-1.218	-13.540	
(U) Congressional Program Reductions		-1.340	
Congressional Rescissions			
Congressional Increases			
Reprogrammings		-12.200	
SBIR/STTR Transfer	-1.218		

(U) Significant Program Changes:

1. FY04: Project A008, Sensor Service Life Extension Programs (Sensor SLEPs) efforts were transferred from Project 5011, Space Situational Awareness Initiatives (this PE).
2. FY04: Project A009, Orbital Deep Space Imager (ODSI), activities were transferred from Project 5011, Space Situational Awareness Initiatives (this PE).
3. FY04: OSD directed transfer of Navy Fence (PE 0305927N) to Air Force (PE 0305910F) in FY04 (\$1M).
4. FY04: Project 4930, Space Based Space Surveillance (SBSS), Block 10 was previously referred to as SBSS Pathfinder and Block 20 was previously referred to as SBSS Objective System.

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BUDGET ACTIVITY 07 Operational System Development				PE NUMBER AND TITLE 0305910F SPACETRACK			PROJECT NUMBER AND TITLE 4930 Space Based Space Surveillance		
Cost (\$ in Millions)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total
4930 Space Based Space Surveillance	10.200	65.752	109.233	84.472	115.357	196.170	204.388	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0		

(U) A. Mission Description and Budget Item Justification

The Space Based Space Surveillance (SBSS) constellation will conduct timely detection and tracking of all man-made objects in orbit around the earth. This includes collecting, processing, and communicating satellite metric and Space Object Identification (SOI) data. The SBSS will support the attainment of Space Surveillance Key Performance Parameters (KPPs) outlined in the USSPACECOM Capstone Requirements Document (CRD) for Space Control.

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

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

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
(U) Complete AoA	1.000	0.000	0.000
(U) Conduct concept definition studies	7.245	0.000	0.000
(U) Program operations	1.955	4.852	5.168
(U) Block 10 design, development, and risk reduction	0.000	60.900	97.065
(U) Block 10 launch segment	0.000	0.000	5.000
(U) Block 20 concept development	0.000	0.000	2.000
(U)	0.000		
(U)	0.000		
(U)	0.000		
(U) Total Cost	10.200	65.752	109.233

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

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</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) None	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

(U) D. Acquisition Strategy

Block 10 is a pathfinder (one satellite) to replace the aging Space-Based Visible (SBV) sensor. The Block 10 satellite is a pathfinder for the full constellation of space based sensors. Block 20 will provide more robust capability as a follow on to Block 10. The SBSS constellation will include four satellites when fully populated.

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Exhibit R-3, RDT&E Project Cost Analysis

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BUDGET ACTIVITY			PE NUMBER AND TITLE					PROJECT NUMBER AND TITLE				
07 Operational System Development			0305910F SPACETRACK					4930 Space Based Space Surveillance				
<u>(U) Cost Categories</u>	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total</u>	<u>FY</u>	<u>FY</u>	<u>FY</u>	<u>FY</u>	<u>FY</u>	<u>FY</u>	<u>Cost to</u>	<u>Total</u>	<u>Target</u>
(Tailor to WBS, or System/Item Requirements) (\$ in Millions)			<u>Prior to FY</u>	<u>2003</u>	<u>2003</u>	<u>2004</u>	<u>2004</u>	<u>2005</u>	<u>2005</u>	<u>Complete</u>	<u>Cost</u>	<u>Value of</u>
			<u>2003</u>	<u>Cost</u>	<u>Award</u>	<u>Cost</u>	<u>Award</u>	<u>Cost</u>	<u>Award</u>			<u>Contract</u>
			<u>Cost</u>		<u>Date</u>		<u>Date</u>		<u>Date</u>			
<u>(U) Product Development</u>												
Block 10 System development (architecture development, system engineering & integration, spacecraft bus design & development, payload preliminary design, ground segment communications architecture, launch segment)	MAPIC CPAF	Northrup Grumman, Redondo Beach, CA	1.688	8.245	Oct-02	60.900	Mar-04	102.065	Oct-04	Continuing	TBD	
Concept definition studies for Block 20	TBD	TBD	0.000	0.000		0.000		2.000	Apr-05	Continuing	TBD	
Risk Reduction	MIPR	MIT/LL, Boston, MA	0.000	0.500	Nov-03	0.600	Dec-04	0.600	Nov-05	0.000	1.700	
Subtotal Product Development			1.688	8.745		61.500		104.665		Continuing	TBD	0.000
Remarks:												
<u>(U) Support</u>												
Program operations	Various	SMC, El Segundo, CA	0.320	1.455	Oct-02	4.252	Oct-04	4.568	Oct-03	Continuing	TBD	
Subtotal Support			0.320	1.455		4.252		4.568		Continuing	TBD	0.000
Remarks:												
<u>(U) Test & Evaluation</u>												
None			0.000	0.000		0.000		0.000		0.000	0.000	
Subtotal Test & Evaluation			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
<u>(U) Management</u>												
None			0.000	0.000		0.000		0.000		0.000	0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
<u>(U) Total Cost</u>			2.008	10.200		65.752		109.233		Continuing	TBD	0.000

Exhibit R-4, RDT&E Schedule Profile

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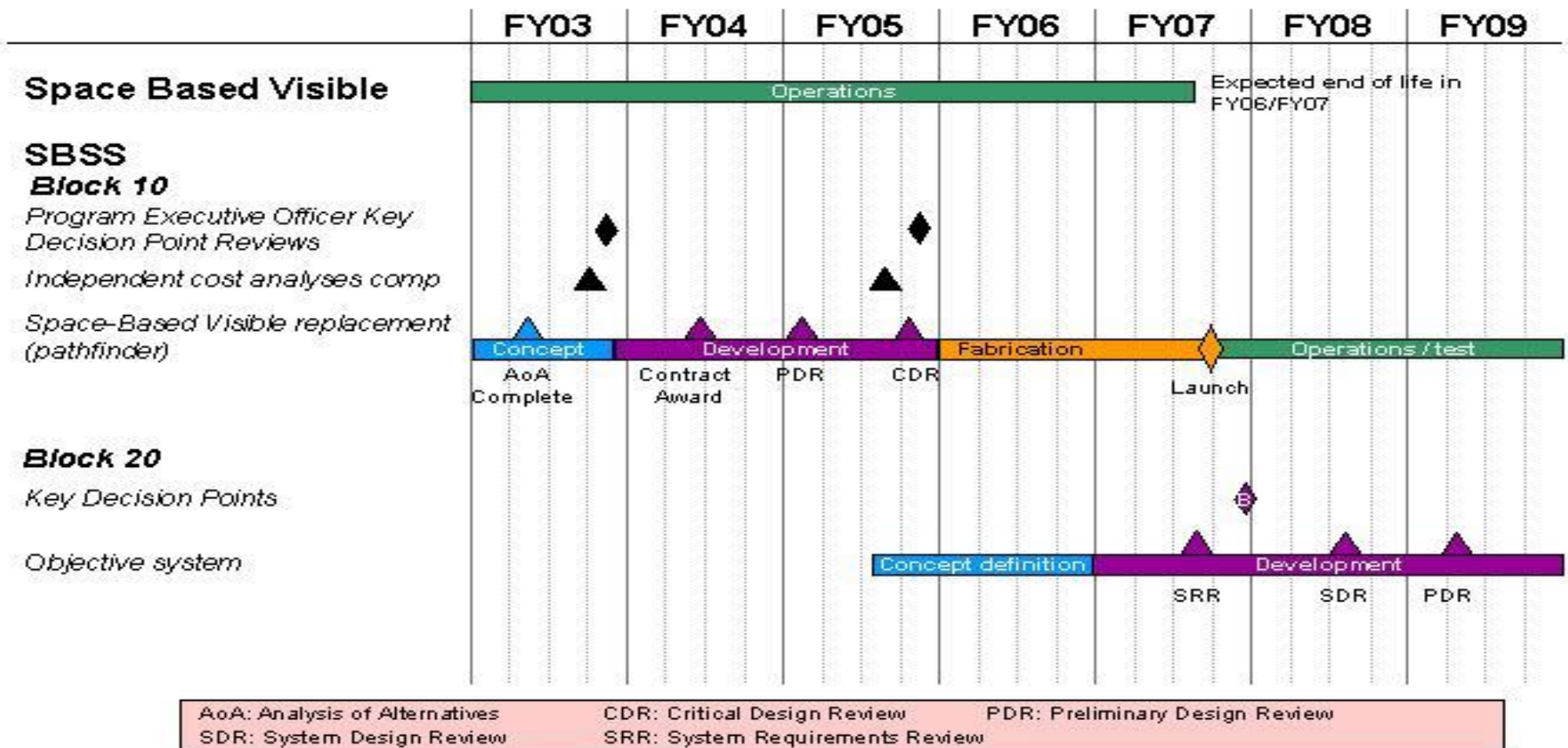
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0305910F SPACETRACK

PROJECT NUMBER AND TITLE
4930 Space Based Space
Surveillance

Space Based Space Surveillance



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Exhibit R-4a, RDT&E Schedule Detail

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0305910F SPACETRACK

PROJECT NUMBER AND TITLE

**4930 Space Based Space
Surveillance**

(U) <u>Schedule Profile</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
(U) Complete AoA	2Q		
(U) Block 10 concept definition studies begin	1Q		
(U) Block 10 Acquisition Strategy Panel	2Q		
(U) Block 10 Program Review	4Q		4Q
(U) Block 10 development contract award		2Q	
(U) Block 10 Preliminary Design Review			1Q
(U) Block 10 Critical Design Review			4Q
(U) Block 20 new start pre-acquisition activities			3Q

Exhibit R-2a, RDT&E Project Justification

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BUDGET ACTIVITY 07 Operational System Development				PE NUMBER AND TITLE 0305910F SPACETRACK			PROJECT NUMBER AND TITLE 5011 Space Situational Awareness Initiatives		
Cost (\$ in Millions)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total
5011 Space Situational Awareness Initiatives	10.089	15.348	12.086	16.222	10.916	9.308	7.593	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0		

(U) A. Mission Description and Budget Item Justification

Space Situation Awareness (SSA) Initiatives ties legacy Space Surveillance Network (SSN) sensors together in the architectural and information realm. SSAI is a critical activity in moving from surveillance-based operations to more real-time SSA.

Space Situation Awareness Command and Control (SSA C2) is a suite of projects to provide fused data and information to the Single Integrated Space Picture (SISP). SSA C2 collects and fuses space Intelligence, Surveillance, Reconnaissance, and Environment (ISRE) information. SSA C2 gathers data in focused ISRE areas, processes and fuses it into SSA information, and provides it to the SISP via the Combatant Commanders Integrated Command and Control System (CCIC2S). The FY05 objectives focus on improvements in space surveillance processing to greatly enhance position and timing data for the Air Force Space Command (AFSPC) satellite catalog. A key part of the FY05 objectives is development and initial use of an SSA Data Fusion Test Bed (SSA TB) to be used to integrate ISRE and evaluate the operational utility of enhancements.

The Space Situation Awareness Integration Office (SSAIO) stood up in direct response to OASD/C3I direction to AF to execute SSA Lead Service/System Integration (LS/SI). The Under Secretary of the Air Force (USecAF) assigned SSA LS/SI responsibilities to AFSPC to facilitate architecture development, investment planning, requirements allocation, and systems integration of SSA across DoD and other US Government organizations/agencies. Deliverables include DoD architecture compliant operational and systems views focused on short and mid-term SSA architectures presented in a formal Modernization Plan/Investment Strategy (MPIS) providing architecture/capabilities based recommendations and a source for service POM positions. The effort implements the National Space Security Architect (NSSA) SSA roadmap.

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

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
(U) SSA C2: Provide improved surveillance & reconnaissance information to SSA	4.991	9.851	8.081
(U) SSA C2: Provide intelligence data to SSA		0.500	0.500
(U) SSA C2: Provide space environmental data to SSA		0.500	0.500
(U) SSA C2: Technical support and requirements development		2.997	1.505
(U) SSAIO: Deliver SSA Architectures to support investment planning	1.486	1.500	1.500
(U) SLEPS: Begin Haystack Services Life Extension Program (SLEP) system design and engineering.	3.612		
(U)			
(U)			
(U)			

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(U)										
(U)										
(U)										
(U)										
(U)										
(U)										
(U)										
(U)	Total Cost							10.089	15.348	12.086

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

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</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) N/A

(U) **D. Acquisition Strategy**

SSA C2: Acquire tools as necessary to optimize existing SSN sensors. Fund connectivity to collect data. Develop test bed to fuse data and check out in a CCIC2S environment prior to use in SISP. FY02 funding began to develop capabilities for improved processing, accuracy, analysis, data fusion, and dissemination of SSA to the space common operating picture. SSA C2 concept and technology development continues in FY05.

SSAIO: Review/update Space Surveillance Task Force results, develop Space Situation Awareness architectures, and initiate discussions with Services and other U.S. Government agencies by using existing engineering/study contract vehicles to obtain direct and infrastructure support from various space planning and development organizations across DoD and industry to include Federally Funded Research and Development Centers (FFRDCs).

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(U) <u>Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total</u> <u>Prior to FY</u> <u>2003</u> <u>Cost</u>	<u>FY</u> <u>2003</u> <u>Cost</u>	<u>FY</u> <u>2003</u> <u>Award</u> <u>Date</u>	<u>FY</u> <u>2004</u> <u>Cost</u>	<u>FY</u> <u>2004</u> <u>Award</u> <u>Date</u>	<u>FY</u> <u>2005</u> <u>Cost</u>	<u>FY</u> <u>2005</u> <u>Award</u> <u>Date</u>	<u>Cost to</u> <u>Complete</u>	<u>Total</u> <u>Cost</u>	<u>Target</u> <u>Value of</u> <u>Contract</u>
(U) <u>Product Development</u>												
Provide improved surveillance & reconnaissance information to SSA	various	various	0.772	4.991		9.851		8.581		Continuing	TBD	
Provide intelligence data to SSA	various	various				0.500				Continuing	TBD	
Provide space environmental data to SSA	various	various	2.505			0.500	Jun-30	0.500	Dec-15	Continuing	TBD	
Deliver SSA Architectures to support investment planning	various	various		1.486		1.500		1.500		Continuing	TBD	
SLEPS	various	various		3.612							3.612	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			3.277	10.089		12.351		10.581		Continuing	TBD	0.000
Remarks:												
(U) <u>Support</u>												
SSA C2 Technical support and requirements development	various	various	0.499			2.997		1.505		Continuing	TBD	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Support			0.499	0.000		2.997		1.505		Continuing	TBD	0.000

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Remarks:								
(U) <u>Test & Evaluation</u>								
						0.000		
Subtotal Test & Evaluation	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Remarks:								
(U) <u>Management</u>								
						0.000		
Subtotal Management	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Remarks:								
(U) Total Cost	3.776	10.089	15.348	12.086	Continuing	TBD	0.000	

Exhibit R-4, RDT&E Schedule Profile

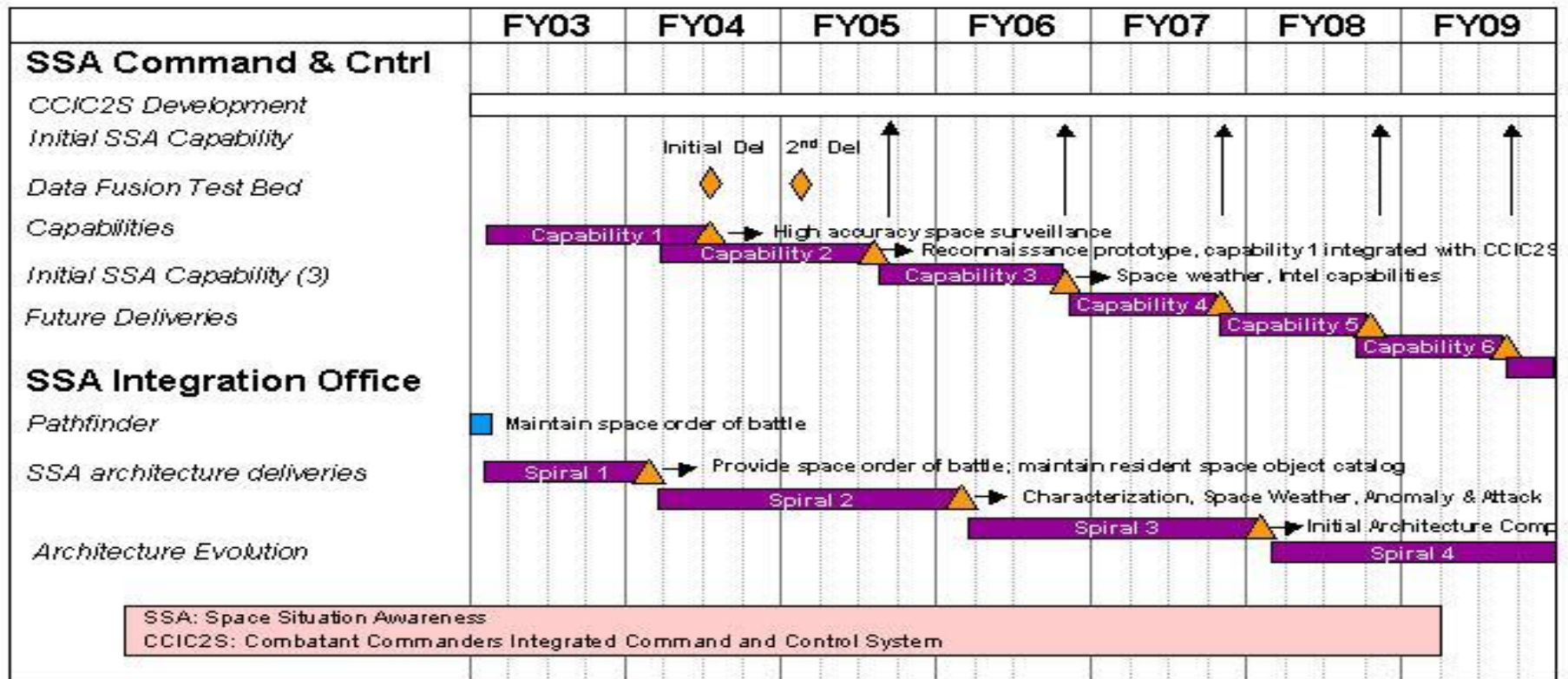
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PROJECT NUMBER AND TITLE
5011 Space Situational Awareness Initiatives

Space Situational Awareness Initiatives



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(U) <u>Schedule Profile</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
(U) High accuracy space surveillance delivery (Capability 1)		3Q	
(U) SSA C2 Fusion Test Bed Initial Delivery		3Q	
(U) SSA C2 Fusion Test Bed Second Delivery			1Q
(U) Reconnaissance prototype and capability 1 integrated into CCIC2S (Capability 2)			3Q
(U) SSAIO Architecture Delivery - Spiral 1		1Q	

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BUDGET ACTIVITY 07 Operational System Development				PE NUMBER AND TITLE 0305910F SPACETRACK			PROJECT NUMBER AND TITLE A008 Sensor Service Life Extension Programs (Sensor SLEPs)		
Cost (\$ in Millions)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total
A008 Sensor Service Life Extension Programs (Sensor SLEPs)	0.000	19.698	31.678	25.211	29.950	9.693	0.000	0.000	116.793
Quantity of RDT&E Articles	0	0	0	0	0	0	0		

Project A008 efforts provide a means to achieve the objectives as established in the Capstone Requirements Document (CRD) as well as the additional benefit of enhancing Space Situational Awareness. In FY03 these projects were located in project 5011.

(U) A. Mission Description and Budget Item Justification

EGLIN SLEP - The AN/FPS-85 radar is a dedicated one-of-a-kind phased array radar located at Eglin AFB, Florida that provides near-earth and deep-space object data for Air Force Space Command (AFSPC). The radar detects, tracks, identifies, characterizes and monitors objects and assesses space threats in earth orbit. The radar tracks over 50% of objects logged by the SSN in the space catalog. The radar is the largest tracker of manned-flight-region objects and contributes significantly to both near-Earth and deep-space tracking missions. This SLEP is required to help achieve the Capstone Requirements Document (CRD). The program will replace unsupportable processing components before critical impact to system operations, improve efficiencies in operations & sustainment, consolidate site work centers, and establish a modern software maintenance environment. The SLEP will enable technology refreshes and posture the system to facilitate future upgraded capabilities.

Haystack Ultra-wide band resolution Satellite Imaging Radar (HUSIR) Upgrade is an X-band radar located in Westford, MA. The system currently yields a 25 centimeter range resolution that provides timely metric and space object identification (SOI) data to AFSPC in support of the space surveillance mission. The upgrade is an AFSPC applied research program that will build a W-band high power transmitter to significantly enhance imaging resolution from the existing 25 centimeters. This upgrade is required to help achieve the Capstone Requirements Document (CRD) objectives.

The Air Force Space Surveillance System (AFSSS) upgrade funding will be used to refine requirements for replacing the current system due to reach its end of life in 2010. An upgraded AFSSS will meet near-earth size and accuracy requirements in the CRD.

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

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
(U) Eglin SLEP engineering design, risk mitigation and project development and other program support		14.448	19.917
(U) HUSIR engineering design, risk mitigation and project development and other program support		4.250	11.761
(U) Program support for Air Force Space Surveillance System (formerly Navy Space Surveillance System or "Fence") upgrade		1.000	
(U) Total Cost	0.000	19.698	31.678

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A008 Sensor Service Life Extension Programs (Sensor SLEPs)**(U) C. Other Program Funding Summary (\$ in Millions)****(U) D. Acquisition Strategy**

EGLIN will use the SENSOR contract with ITT Industries to execute the SLEP. Under this contract, the Government and contractor will work together through all stages of proposal development and contract modification process to achieve technical agreement prior to submittal of formal proposal. This non-MDAP program will use the National Security Space Acquisition Policy (NSSAP) 03-01.

The HUSIR program will employ the National Space Security Acquisition Policy 03-01, Evolutionary Acquisition concept. MIT/LL is performing the work under the master contract with ESC. MIT/LL is a non-profit Federally Funded Research & Development Center (FFRDC) program and the HUSIR upgrade is classified as "applied research" under the contract between MIT/LL and ESC.

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BUDGET ACTIVITY 07 Operational System Development					PE NUMBER AND TITLE 0305910F SPACETRACK					PROJECT NUMBER AND TITLE A008 Sensor Service Life Extension Programs (Sensor SLEPs)		
<u>(U) Cost Categories</u>	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior to FY 2003 Cost</u>	<u>FY 2003 Cost</u>	<u>FY 2003 Award Date</u>	<u>FY 2004 Cost</u>	<u>FY 2004 Award Date</u>	<u>FY 2005 Cost</u>	<u>FY 2005 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
(\$ in Millions)												
<u>(U) Product Development</u>												
Eglin SLEP: Develop open system architecture & extend system life through 2025.	PR/CPAF	ITT/Colorado				11.273	Dec-03	16.884	Dec-04	Continuing	TBD	
HUSIR: Build a W-band high-power transmitter & modify antenna for W-band operation.	PR/FP-LOE	Lincoln Lab/Massachusetts				5.761	Nov-03	11.808	Nov-04	Continuing	TBD	
HUSIR: Evaluate design of open system architecture development.	PR/FP-LOE	MITRE/Massachusetts				0.120	May-04	0.130	Nov-04	Continuing	TBD	
EGLIN: Evaluate design of development effort.	PR/FP-LOE	Sencom/Massachusetts				0.876	Oct-03	1.600	Nov-04	Continuing	TBD	
HUSIR: Evaluate design of development effort.	Various/Various	Various/Various				0.109	Apr-04	0.707	Nov-04	Continuing	TBD	
AFSSS: Requirements development, trade studies on siting/design alternatives.	various	various				0.736	Sep-04				0.736	
Subtotal Product Development			0.000	0.000		18.875		31.129		Continuing	TBD	0.000
Remarks:												
<u>(U) Support</u>												
Review & management of design/development efforts.	PR/FP-LOE	Sencom/Massachusetts				0.463	Oct-03	0.477	Nov-04	Continuing	TBD	
Review & management of design/development efforts.	Various/Various	SPO/Various				0.360	Sep-04	0.072	Nov-04	Continuing	TBD	
Subtotal Support			0.000	0.000		0.823		0.549		Continuing	TBD	0.000
Remarks:												
<u>(U) Test & Evaluation</u>												
Subtotal Test & Evaluation			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
<u>(U) Management</u>												

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Exhibit R-3, RDT&E Project Cost Analysis

DATE

February 2004

BUDGET ACTIVITY	PE NUMBER AND TITLE			PROJECT NUMBER AND TITLE			
07 Operational System Development	0305910F SPACETRACK			A008 Sensor Service Life Extension Programs (Sensor SLEPs)			
Subtotal Management	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Remarks:							
(U) Total Cost	0.000	0.000	19.698	31.678	Continuing	TBD	0.000

Exhibit R-4, RDT&E Schedule Profile

DATE

February 2004

BUDGET ACTIVITY
07 Operational System Development

PE NUMBER AND TITLE
0305910F SPACETRACK

PROJECT NUMBER AND TITLE
A008 Sensor Service Life Extension Programs (Sensor SLEPs)

Eglin Radar SLEP

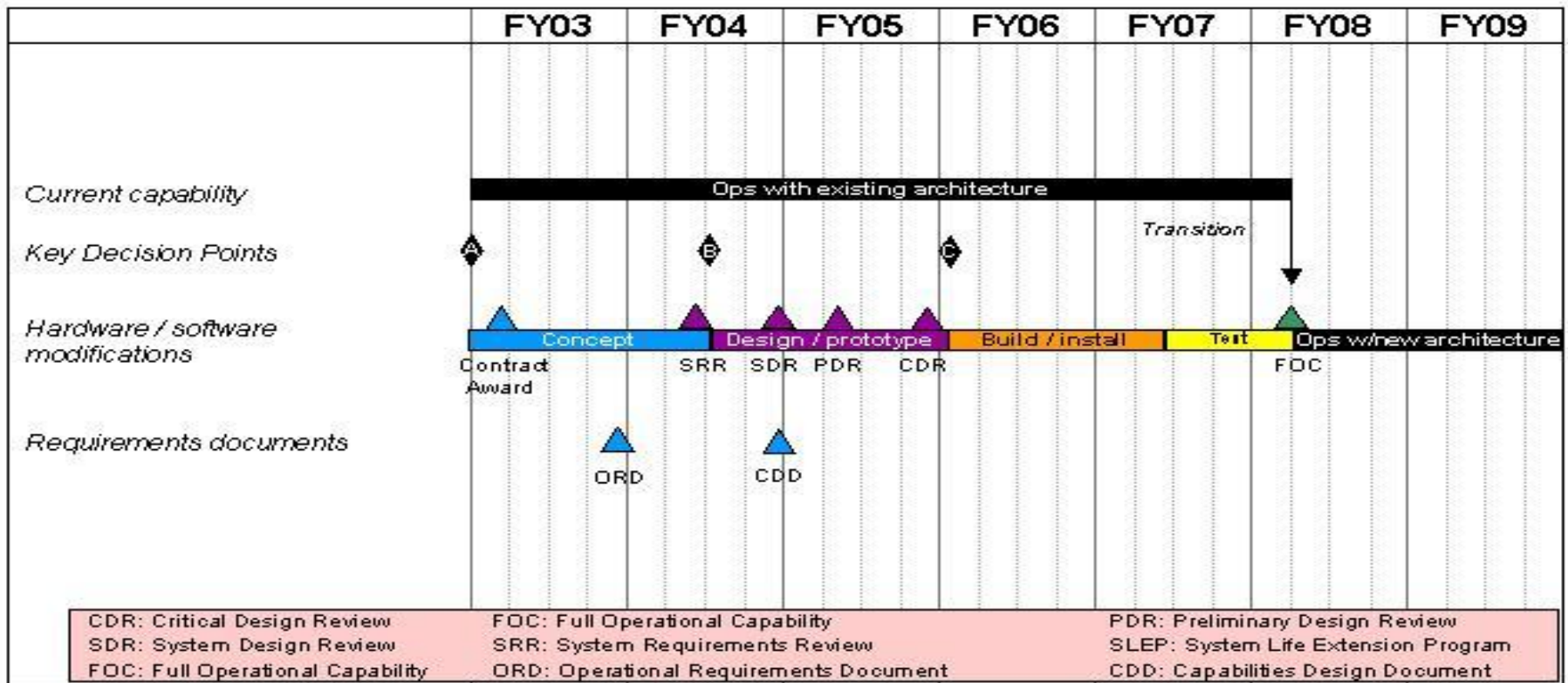


Exhibit R-4, RDT&E Schedule Profile

DATE

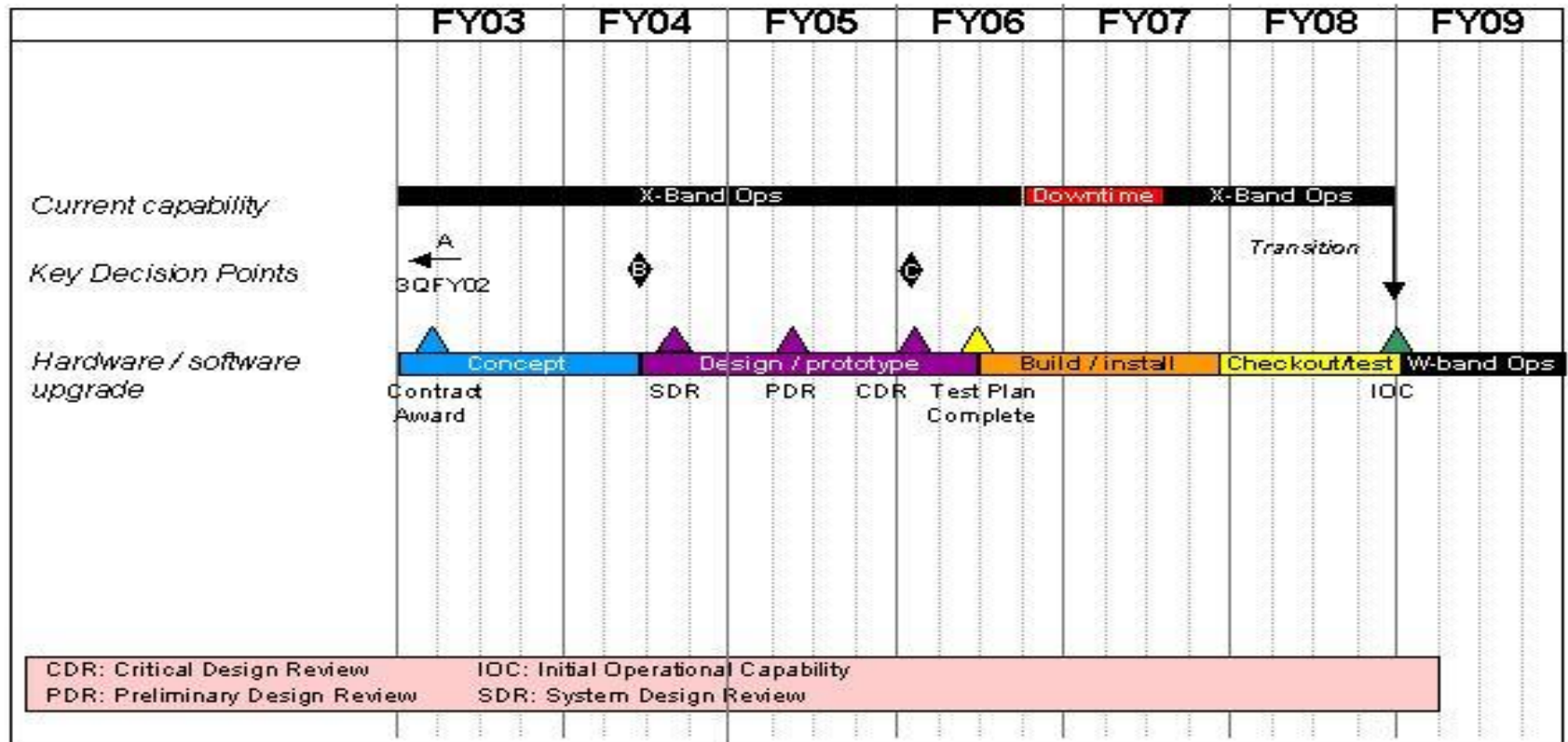
February 2004

BUDGET ACTIVITY
07 Operational System Development

PE NUMBER AND TITLE
0305910F SPACETRACK

PROJECT NUMBER AND TITLE
A008 Sensor Service Life Extension Programs (Sensor SLEPs)

Haystack Radar Upgrade



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Exhibit R-4a, RDT&E Schedule Detail	DATE February 2004
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BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0305910F SPACETRACK	PROJECT NUMBER AND TITLE A008 Sensor Service Life Extension Programs (Sensor SLEPs)
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	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
(U) <u>Schedule Profile</u>			
(U) Eglin System Req Review		2Q	
(U) Eglin KDP-B Decision		3Q	
(U) Eglin System Design Review		4Q	
(U) Eglin Final Preliminary Design Review(PDR)			2Q
(U) Eglin Critical Design Review(CDR)			4Q
(U) HUSIR Contract Award	1Q		
(U) HUSIR Approved AF1067		2Q	
(U) HUSIR KDP-B		2Q	
(U) HUSIR SDR		3Q	
(U) HUSIR PDR			2Q

Exhibit R-2a, RDT&E Project Justification

DATE
February 2004

BUDGET ACTIVITY 07 Operational System Development				PE NUMBER AND TITLE 0305910F SPACETRACK			PROJECT NUMBER AND TITLE A009 Orbital Deep Space Imager (ODSI)		
Cost (\$ in Millions)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total
A009 Orbital Deep Space Imager (ODSI)	0.000	3.896	8.841	24.932	57.352	187.342	217.590	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0		

FY 2004: Project 5011, Space Situational Awareness Initiatives, was changed to separate activities for ease of description and execution by transferring the Orbital Deep Space Imager Project activities into Project A009, Orbital Deep Space Imager, with no change in funding.

(U) A. Mission Description and Budget Item Justification

The Orbital Deep Space Imager (ODSI) provides imagery of deep space objects for satellite characterization in support of overall battlespace awareness. ODSI will support the satisfaction of timeliness and characterization requirements as outlined in the USSPACECOM Space Control Capstone Requirements Document (CRD).

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

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

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
(U) Conduct Concept definition studies	0.000	0.000	5.864
(U) Architecture development	0.000	0.213	0.485
(U) Conduct Pre-Phase A Activities	0.000	2.730	0.000
(U) Program Operations	0.000	0.953	2.492
(U) Total Cost	0.000	3.896	8.841

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

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</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) None	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

(U) D. Acquisition Strategy

The project will begin with Key Decision Point (KDP) A declaration in late FY04. Concept Definition Activities will continue through FY05, and culminate in an early FY06 KDP B decision. Subsequent 2QFY06 contracts follow. A single contractor will be selected in FY08 to complete design to CDR level. KDP C will be in FY09 followed by production start. First launch is planned for FY12.

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Exhibit R-3, RDT&E Project Cost Analysis

DATE

February 2004

BUDGET ACTIVITY			PE NUMBER AND TITLE					PROJECT NUMBER AND TITLE				
07 Operational System Development			0305910F SPACETRACK					A009 Orbital Deep Space Imager (ODSI)				
(U) Cost Categories (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total</u> <u>Prior to FY</u> <u>2003</u> <u>Cost</u>	<u>FY</u> <u>2003</u> <u>Cost</u>	<u>FY</u> <u>2003</u> <u>Award</u> <u>Date</u>	<u>FY</u> <u>2004</u> <u>Cost</u>	<u>FY</u> <u>2004</u> <u>Award</u> <u>Date</u>	<u>FY</u> <u>2005</u> <u>Cost</u>	<u>FY</u> <u>2005</u> <u>Award</u> <u>Date</u>	<u>Cost to</u> <u>Complete</u>	<u>Total</u> <u>Cost</u>	<u>Target</u> <u>Value of</u> <u>Contract</u>
(U) <u>Product Development</u>												
Conduct Pre-phase A Activities and Architecture Development	MAPIC CPAF	Northrop Grumman, Redondo Beach, CA	0.000	0.000		2.943	Feb-04	0.485	Nov-04	2.953	6.381	
Concept Definition Studies	TBD	TBD	0.000	0.000		0.000		5.864	Nov-04	Continuing	TBD	
Subtotal Product Development			0.000	0.000		2.943		6.349		Continuing	TBD	0.000
Remarks:												
(U) <u>Support</u>												
Program Operations	Various	SMC, El Segundo, CA	0.000	0.000		0.953	Feb-04	2.492	Oct-04	Continuing	TBD	
Subtotal Support			0.000	0.000		0.953		2.492		Continuing	TBD	0.000
Remarks:												
(U) <u>Test & Evaluation</u>												
None			0.000	0.000		0.000		0.000		0.000	0.000	
Subtotal Test & Evaluation			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) <u>Management</u>												
None			0.000	0.000		0.000		0.000		0.000	0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) Total Cost			0.000	0.000		3.896		8.841		Continuing	TBD	0.000

Exhibit R-4, RDT&E Schedule Profile

DATE

February 2004

BUDGET ACTIVITY
07 Operational System Development

PE NUMBER AND TITLE
0305910F SPACETRACK

PROJECT NUMBER AND TITLE
A009 Orbital Deep Space Imager (ODSI)

Spacetrack Schedule: ODSI Development

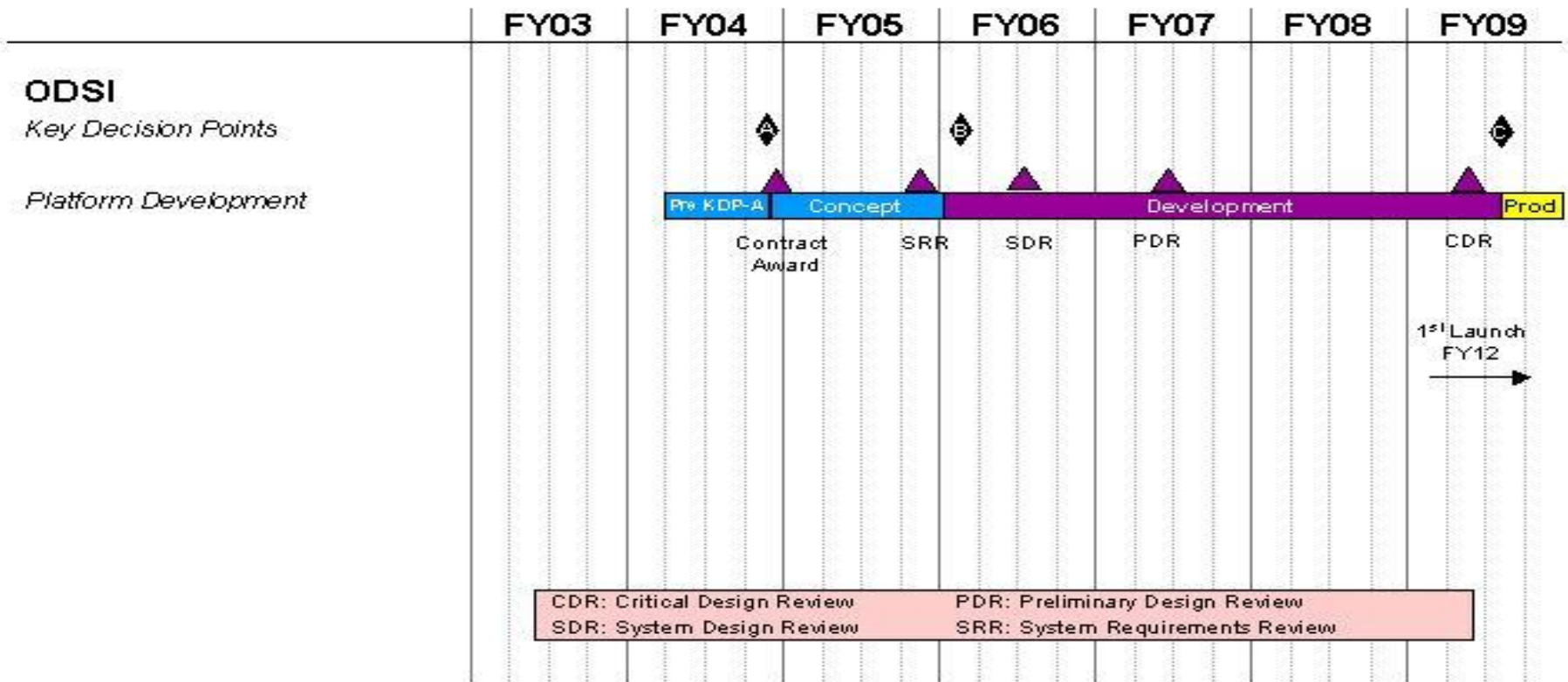


Exhibit R-4a, RDT&E Schedule Detail

DATE

February 2004

BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

0305910F SPACETRACK

PROJECT NUMBER AND TITLE

A009 Orbital Deep Space Imager
(ODSI)

(U) Schedule Profile

FY 2003

FY 2004

FY 2005

(U) KDP A

4Q

(U) Begin concept definition studies

1Q

(U) System Requirements Review

3Q

(U) Conduct Phase B independent program assessment

4Q