

UNCLASSIFIED

PE NUMBER: 0603858F
 PE TITLE: Space Radar

Exhibit R-2, RDT&E Budget Item Justification	DATE February 2007
---	-------------------------------------

BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE 0603858F Space Radar
---	---

Cost (\$ in Millions)	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost	98.062	185.399	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
A004 SBR Concept and Technology Development	98.062	185.399	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	TBD

In FY 2008 Project 64A004 SBR Concept & Tech Development efforts were transferred from PE 0603858F to PE 0305159F (Defense Reconnaissance Support Activities) to realign space radar funding. This document is jointly developed and integrated with NRO and NGA SR budget documents

(U) A. Mission Description and Budget Item Justification

DoD and National users have committed to pursue a common, flexible, agile, and responsive space radar system which will address future intelligence, surveillance, and reconnaissance (ISR) needs of DoD, national intelligence and civil users. Key to this commitment is the continued development of a flexible and agile multi-mode radar providing Synthetic Aperture Radar (SAR), Surface Moving Target Indications (SMTI), High Resolution Terrain Information (HRTI), Advanced Geospatial Intelligence (AGI) and Open Ocean Surveillance (OOS) capabilities. Space Radar will be supported by a ground infrastructure and a space and terrestrial communications network that permits Space Radar data to be stored, processed, exploited, and disseminated within timelines responsive to the needs of the user community. Space Radar is jointly managed and will be operated directly under the authorities of the DNI and the SECDEF. Space Radar will allow a deep look into denied areas of interest in all weather, day or night, without risk to personnel or equipment. Space Radar's on-demand intelligence capability will have global utility during peacetime and across the entire spectrum of conflict. The Initial Launch Capability is scheduled for FY 2016.

The Phase A program focuses on overall program affordability by stressing innovation through program risk reduction and technology maturation in addition to a comprehensive systems engineering process. The program integrates National Reconnaissance Office (NRO), National Geospatial-Intelligence Agency (NGA) activities, with support from Defense Advanced Research Projects Agency (DARPA) and Air Force Research Laboratory (AFRL), to ensure both DoD and Intelligence Community requirements are addressed and the best available technologies explored for application. The program is implementing a risk reduction framework approach, to include a mix of ground, air, and existing space components, with a focus on risk reduction, technology maturation, CONOPS experimentation, and early system engineering analyses consistent with successful acquisition best practices.

This program is in Budget Activity 4, Advanced Component Development and Prototypes (ACDP), since it involves evaluating integrated technologies in an operating environment as realistic as possible to assess the performance and cost implications of implementing advanced technologies.

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification

DATE

February 2007

BUDGET ACTIVITY

04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE

0603858F Space Radar

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

	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Previous President's Budget	98.253	266.401	565.470	1,068.093
(U) Current PBR/President's Budget	98.062	185.399	0.000	0.000
(U) Total Adjustments	-0.191	-81.002		
(U) Congressional Program Reductions		-80.298		
Congressional Rescissions	-0.003	-0.704		
Congressional Increases				
Reprogrammings	-0.188			
SBIR/STTR Transfer				

(U) **Significant Program Changes:**

The DoD has funded the program in accordance with the cost-sharing budget developed with ODNI. Accordingly, beginning in FY08 the funding for the program has been transferred to the Defense Reconnaissance Support Activities Program Element (PE 0305159F) to increase integration and transparency between DoD and Intelligence Community efforts. The Space Radar program developed a detailed Risk Reduction Framework with the express purpose of performing systems engineering trades and defining the technology maturity needed to allow a well informed Phase B milestone decision in FY 2009. The concept definition efforts have been adjusted to maximize the use of ground, airborne, and existing space elements to reduce risk, mature radar technologies, implement concepts for horizontal integration, experimentation, and seek new technology breakthroughs resulting in increased confidence in technology maturation, program cost estimating, and payload development. The initial launch capability is now scheduled for FY2016 (vs 2015) as a result of congressional program reductions in FY07. The SecDef and DNI have committed to Space Radar as the single acquisition program to satisfy the needs of DoD and the National Intelligence Community, thereby avoiding multiple systems and duplication of effort and cost.

Exhibit R-2a, RDT&E Project Justification

DATE
February 2007

BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)				PE NUMBER AND TITLE 0603858F Space Radar				PROJECT NUMBER AND TITLE A004 SBR Concept and Technology Development		
Cost (\$ in Millions)	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total
A004 SBR Concept and Technology Development	98.062	185.399	0.000	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		

In FY 2008 Project 64A004 SBR Concept & Tech Development efforts were transferred from PE 0603858F to PE 0305159F (Defense Reconnaissance Support Activities) to realign space radar funding

(U) A. Mission Description and Budget Item Justification

DoD and National users have committed to pursue a common, flexible, agile, and responsive space radar system which will address future intelligence, surveillance, and reconnaissance (ISR) needs of DoD, national intelligence and civil users. Key to this commitment is the continued development of a flexible and agile multi-mode radar providing Synthetic Aperture Radar (SAR), Surface Moving Target Indications (SMTI), High Resolution Terrain Information (HRTI), Advanced Geospatial Intelligence (AGI) and Open Ocean Surveillance (OOS) capabilities. Space Radar will be supported by a ground infrastructure and a space and terrestrial communications network that permits Space Radar data to be stored, processed, exploited, and disseminated within timelines responsive to the needs of the user community. Space Radar is jointly managed and will be operated directly under the authorities of the DNI and the SECDEF. Space Radar will allow a deep look into denied areas of interest in all weather, day or night, without risk to personnel or equipment. Space Radar's on-demand intelligence capability will have global utility during peacetime and across the entire spectrum of conflict. The Initial Launch Capability is scheduled for FY 2016.

The Phase A program focuses on overall program affordability by stressing innovation through program risk reduction and technology maturation in addition to a comprehensive systems engineering process. The program integrates National Reconnaissance Office (NRO), National Geospatial-Intelligence Agency (NGA) activities, with support from Defense Advanced Research Projects Agency (DARPA) and Air Force Research Laboratory (AFRL), to ensure both DoD and Intelligence Community requirements are addressed and the best available technologies explored for application. The program is implementing a risk reduction framework approach, to include a mix of ground, air, and existing space components, with a focus on risk reduction, technology maturation, CONOPS experimentation, and early system engineering analyses consistent with successful acquisition best practices.

This program is in Budget Activity 4, Advanced Component Development and Prototypes (ACDP), since it involves evaluating integrated technologies in an operating environment as realistic as possible to assess the performance and cost implications of implementing advanced technologies.

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

	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Continue to reduce technology risk and perform systems engineering trades to make progress toward a successful System Requirements Review (SRR) in FY08. Continue to implement a comprehensive risk reduction framework that targets advancement in processing and exploitation algorithms; architecture and horizontal integration; system of systems engineering effort; payload and spacecraft technologies; and cost maturity.	86.740	169.069	0.000	0.000

Exhibit R-2a, RDT&E Project Justification	DATE February 2007
--	------------------------------

BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE 0603858F Space Radar	PROJECT NUMBER AND TITLE A004 SBR Concept and Technology Development
---	---	---

(U) <u>B. Accomplishments/Planned Program (\$ in Millions)</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Continue wargaming and experimentation, and modeling and simulation (M&S) activities to enhance system engineering capabilities. Improve Electronically Steered Array performance, mature end-to-end payload testbeds, refine signal processing algorithms, and prepare for a successful KDP-B in FY2009. The initial activities in the Phase B program will build upon the comprehensive risk reduction framework by expanding the use of integrated Tasking, Processing, Exploitation, and Dissemination (TPED) demonstrations and end-to-end experimentation activities through a mix of modeling and simulation and hardware prototype demonstrations.				
(U) Continue program support activities to include, but not limited to acquisition planning, schedule management, requirements/CONOPS development, source selection, and financial management.	11.322	16.330	0.000	0.000
(U) Total Cost	98.062	185.399	0.000	0.000

(U) <u>C. Other Program Funding Summary (\$ in Millions)</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) Related Office of Director of National Intelligence (ODNI) funding *										
(U) Related DoD funding**										
* ODNI - National Intelligence Program (NIP) funding share is detailed in separate classified ODNI submission										
** DoD - Military Intelligence Program (MIP) funding share is detailed in separate classified DoD submission										

(U) D. Acquisition Strategy
 The Space Radar Integrated Program Office (IPO) will lead the effort with the National Reconnaissance Office (NRO), National Geospatial Intelligence Agency (NGA) and the Office of the Director of National Intelligence (ODNI) as the principal mission partners, with other Service, DoD, and Intelligence Community participation. The SR IPO has awarded two contracts for Concept Definition and plans to select a single contractor after KDP-B. The program continues to emphasize up front, robust system engineering activities and a block acquisition approach to reduce overall program risk and enhance affordability.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis

DATE
February 2007

BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE 0603858F Space Radar	PROJECT NUMBER AND TITLE A004 SBR Concept and Technology Development
---	---	---

<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 Prior to FY 2006 Cost</u>	<u>FY 2006 Cost</u>	<u>FY 2006 Award Date</u>	<u>FY 2007 Cost</u>	<u>FY 2007 Award Date</u>	<u>FY 2008 Cost</u>	<u>FY 2008 Award Date</u>	<u>FY 2009 Cost</u>	<u>FY 2009 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
<u>(U) Product Development</u>														
Phase A Concept Development/Technology Risk Reduction Activities/Phase B RR & Design Development	Various Contracts	Various	248.554	86.928	Oct-05	169.069	Oct-06						504.551	
Subtotal Product Development			248.554	86.928		169.069		0.000		0.000		0.000	504.551	0.000
Remarks:														
<u>(U) Support</u>														
SMC, ESC, AFSPC, NRO & NGA	Various Contracts	Various	29.793	11.134	Oct-05	16.330	Oct-06						57.257	
Subtotal Support			29.793	11.134		16.330		0.000		0.000		0.000	57.257	0.000
Remarks:														
<u>(U) Test & Evaluation</u>														
N/A													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>														
N/A													0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000
Remarks:														
<u>(U) Total Cost</u>			278.347	98.062		185.399		0.000		0.000		0.000	561.808	0.000

Exhibit R-4, RDT&E Schedule Profile

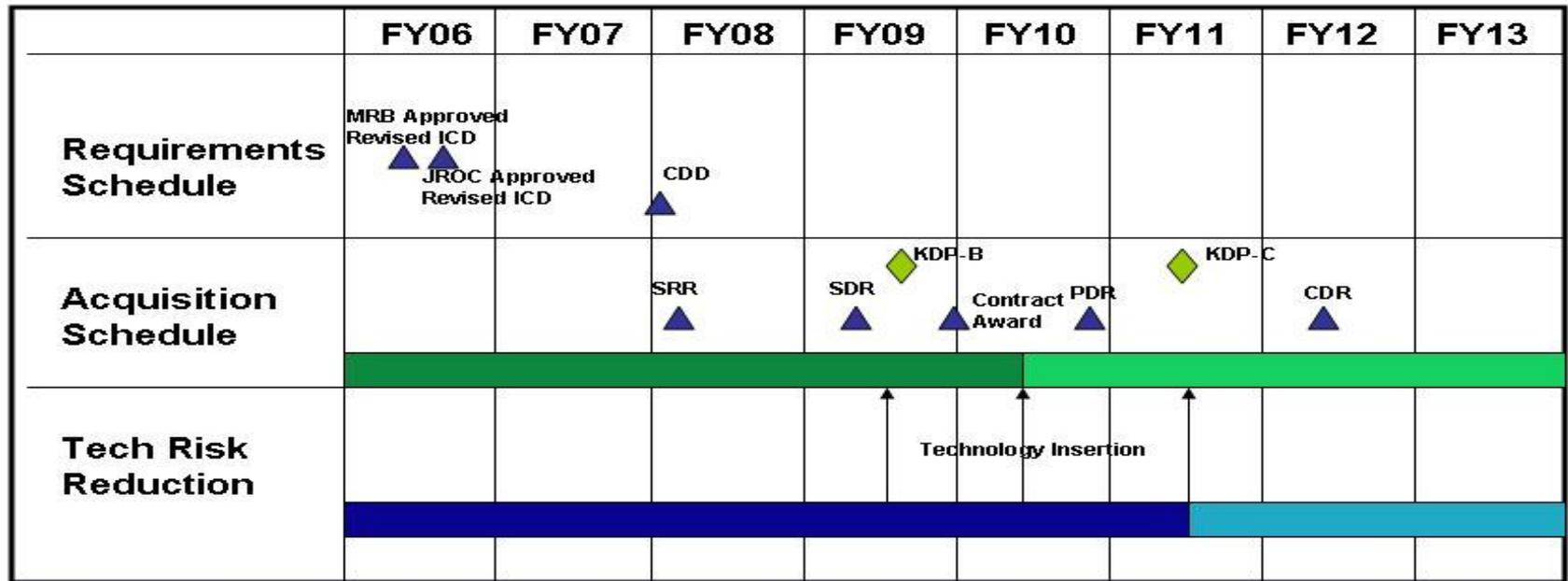
DATE
February 2007

BUDGET ACTIVITY
04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE
0603858F Space Radar

PROJECT NUMBER AND TITLE
A004 SBR Concept and Technology Development

Space Radar Schedule



AoA: Analysis of Alternatives CDR: Critical Design Review ICD: Initial Capabilities Document CDD-Capabilities Development Document
PDR: Preliminary Design Review SDR: System Design Review SRR: System Requirements Review

■ Concept Definition ■ Design Development ■ Tech Risk Reduction ■ Future Increments ▲ ◆ Key Events

UNCLASSIFIED

Exhibit R-4a, RDT&E Schedule Detail		DATE February 2007
--	--	------------------------------

BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE 0603858F Space Radar	PROJECT NUMBER AND TITLE A004 SBR Concept and Technology Development
---	---	---

(U) <u>Schedule Profile</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) JROC/ MRB Approved Revised ICD	2Q			
(U) Mission Utility Assessment		2Q		
(U) System Requirements Review (SRR)			1Q	
(U) Key Decision Point B (KDP-B)				3Q