

## UNCLASSIFIED

## RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 2003

## BUDGET ACTIVITY

**04 - Advanced Component Development and Prototypes  
(ACD&P)**

## PE NUMBER AND TITLE

**0603858F Space-Based Radar Dem/Val**

## PROJECT

**A004**

COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
A004 SBR Concept and Technology Development	0	47,149	274,104	358,669	467,459	503,772	1,178,181	1,547,545	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

In FY 2003, the Cost of War Transfer Account placed \$43.0M in S&T PE 0602500F for SBR support.

(U) **A. Mission Description**

The 2001, JROC validated, Multi-Theater Target Tracking Capability (MT3C) Mission Needs Statement (MNS) establishes the requirement for continuous multi-theater surveillance, identification, tracking, and targeting of surface-moving targets. In November 2001 USD(AT&L) directed a focused requirements and risk reduction effort to provide a space element of a future air/space Intelligence, Surveillance, and Reconnaissance (ISR) system to satisfy the MT3C MNS.

The Space Based Radar (SBR) program is focused to mature technology and develop an C4ISR system capable of providing Surface Moving Target Indication (MTI), Synthetic Aperture Radar (SAR) imaging, and Digital Terrain and Elevation Data (DTED) over a large portion of the Earth on a near-continuous basis. The system will maximize utility to the tactical war fighters through responsive tasking and timely data dissemination. The SBR system will allow military forces a 'deep-look' into denied areas of interest, on a non-intrusive basis without risk to personnel or resources. This can be done across the spectrum of conflict and simultaneously in multiple theaters which is not currently available with existing capabilities.

Technology maturation, risk reduction and concept development are essential elements of the SBR program definition. Investments in key risk areas are focused to mature technologies leading to component design and demonstration. Concept development activities will focus on reducing risk, integrating technologies, and evaluating system level concepts within the broad range of the C4ISR architecture. Modeling and simulation will maximize the operational capabilities of the SBR system. The 2004 program continues, but is not limited to Technology Risk Reduction activities. The program will leverage NRO, NIMA, DARPA and AFRL activities, in addition to the baseline SBR effort.

(U) **FY 2002 (\$ in Thousands)**

(U) \$0 Accomplishments/Planned Program  
 (U) \$0 No Activity - Program funded in PE 0604251F, Space-Based Radar (SBR) EMD  
 (U) \$0 Total

Project A004

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Exhibit R-2 (PE 0603858F)

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>February 2003</b>
BUDGET ACTIVITY <b>04 - Advanced Component Development and Prototypes (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603858F Space-Based Radar Dem/Val</b>	
		PROJECT <b>A004</b>

  

(U) **A. Mission Description Continued**

(U) **FY 2003 (\$ in Thousands)**

(U) \$11,155	Continue Technology Risk Reduction activities (Continuation of Electronically Scanned Array (ESA) effort; Continue on-board processing efforts; Continue BMC3 effort; Provide Demonstration support)
(U) \$11,023	Continue Requirements Development (SBR system and operational requirements definition)
(U) \$19,101	Begin Concept Definition for candidate operational system
(U) \$5,870	Continue Program Support (Concept Evaluation, Schedule Management, Independent Cost Analysis, Technical Evaluation, Source Selection)
(U) \$47,149	Total

(U) **FY 2004 (\$ in Thousands)**

(U) \$133,000	Continue Technology Risk Reduction activities, including but not limited to acceleration of Electronically Scanned Array (ESA) and on-board processing efforts to include end-to-end payload prototype development and development of alternative signal processing algorithms); expand BMC3 effort to include interface identification and definition; provide ACTD support
(U) \$119,104	Complete Concept Definition; additional efforts include but are not limited to development of precise costing methodologies and conduct modeling and simulation system performance and utility analyses; conduct up-front, in-depth system engineering efforts; develop an integrated end-to-end system architecture to include alternative communications architectures and mission management concepts; radar product development analysis; initiate comprehensive software architecture activities; explore and conduct testbed activities.
(U) \$22,000	Continue Program Support (including but not limited to acquisition planning, schedule management, requirements development, source selection and financial management support)
(U) \$274,104	Total

(U) **B. Budget Activity Justification**

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

Project A004
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Exhibit R-2 (PE 0603858F)

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PROJECT

**A004**

(U) **E. Acquisition Strategy**

The Air Force will lead the SBR Joint Program Office with the National Reconnaissance Office (NRO) and National Imagery and Mapping Agency (NIMA) as the principal partners with other service active participation. The acquisition strategy will consist of a mixture of sole source and competitive award approaches.

(U) **F. Schedule Profile**

	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) AoA Start		*										
(U) AoA Completion									X			
(U) Began Requirements Development		*										
(U) Began Technology Risk Reduction		*										
(U) Began Concept Definition					*							
(U) Initial CONOPs complete						X						
(U) Draft IRD to AFROC							X					
(U) Key Decision Point A (KDP-A)							X					
(U) Key Decision Point B (KDP-B)										X		

\*= Completed Event, X = Planned Event

Narrative: N/A

## UNCLASSIFIED

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE				PROJECT		
04 - Advanced Component Development and Prototypes (ACD&P)					0603858F Space-Based Radar Dem/Val				A004		
(U) A. Project Cost Breakdown (\$ in Thousands)											
					FY 2002		FY 2003		FY 2004		
(U)	Technology Risk Reduction effort						11,155		133,000		
(U)	Requirements Development						11,023		0		
(U)	Concept Definition for candidate operational system						19,101		119,104		
(U)	Program Support						5,870		22,000		
(U)	Total						47,149		274,104		
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
(U) Performing Organizations:											
<u>Contractor or Government</u>		<u>Contract Method/Type or Funding Vehicle</u>		<u>Award or Obligation Date</u>		<u>Performing Activity EAC</u>		<u>Project Office EAC</u>		<u>Total Prior to FY 2002</u>	
<u>Performing Activity</u>		<u>or Funding Vehicle</u>		<u>Obligation Date</u>		<u>Activity EAC</u>		<u>Office EAC</u>		<u>Budget FY 2002</u>	
<u>Product Development Organizations</u>										<u>Budget FY 2003</u>	
Technology Risk Reduction Effort (Contractors TBD)		Various Contracts		Various		Continuing		Continuing		11,155	
Requirements Development		FFRDC/SETA and GSA Contracts		Various		Continuing		Continuing		11,023	
Concept Definition		Competitive		Dec '02		Continuing		Continuing		19,101	
<u>Support and Management Organizations</u>										<u>Budget FY 2004</u>	
SMC, ESC, AFSPC & NRO		Various		Various						11,023	
<u>Test and Evaluation Organizations</u>										0	
N/A										0	
										11,023	
										19,101	
										119,104	
										Continuing	
										TBD	
										5,870	
										22,000	
										Continuing	
										TBD	

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Exhibit R-3 (PE 0603858F)

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Exhibit R-3 (PE 0603858F)

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE	
							February 2003	
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT	
04 - Advanced Component Development and Prototypes (ACD&P)				0603858F Space-Based Radar Dem/Val			A004	
(U) <u>Government Furnished Property:</u>								
	<u>Contract</u>							
	<u>Method/Type</u>	<u>Award or</u>						
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>
<u>Product Development Property</u>								
None								
<u>Support and Management Property</u>								
None								
<u>Test and Evaluation Property</u>								
None								
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
<u>Subtotals</u>				<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>
Subtotal Product Development						41,279	252,104	TBD
Subtotal Support and Management						5,870	22,000	TBD
Subtotal Test and Evaluation								
Total Project						47,149	274,104	TBD

Project A004

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Exhibit R-3 (PE 0603858F)

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