RDT&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: 0603438F Space Control Technology

	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
	Total Program Element (PE) Cost	28,967	13,609	14,714	15,786	14,168	23,035	30,556	40,275	Continuing	TBD
2611	Technology Insertion Planning and Analysis	28,967	13,609	9,409	9,414	9,499	12,555	15,741	20,644	Continuing	TBD
A007	Space Range	0	0	5,305	6,372	4,669	10,480	14,815	19,631	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

In FY 2004, Project A007, Space Range, was transferred from Project 2611 in this PE for efforts to develop the Space Range.

(U) A. Mission Description

This program supports a range of activities including technology planning, development, demonstrations and prototyping, as well as modeling, simulations and exercises to support development of tactics and procedures in the Space Control mission area. The types of Space Control activities accomplished are Space Situational Awareness (SSA) (formally Surveillance), Defensive Counterspace (DCS) (formally Protection and Prevention), and Offensive Counterspace (OCS) (formally Negation). For use in the Space Control mission area, SSA includes monitoring, detecting, identifying, tracking, assessing, verifying, categorizing, and characterizing, objects and events in space. DCS includes defensive activities to protect U.S. and friendly space-systems assets, resources, and operations from enemy attempts to negate or interfere and prevention activities that limit or eliminate an adversary's ability to use U.S. space systems and services for purposes hostile to U.S. national security interests. OCS activities disrupt, deny, degrade or destroy space systems, or the information they provide, which may be used for purposes hostile to U.S. national security interests. Consistent with DOD policy, the negation efforts of this program focus only on negation technologies which have temporary, localized, and reversible effects. Also supported is the development of the system architecture for space control elements of the space range. This includes development and demonstration of test assets, special test equipment, capabilities and systems required to test, validate, and verify performance of integrated space control systems. Additionally, this program supports the development of test range assets required to support exercises, training, and tactics development for space control systems.

(U) B. Budget Activity Justification

These two projects are in Budget Activity 4, Advanced Component Development and Prototypes, because they support the research, demonstration, component development and prototyping of Space Control technologies.

RDT&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: 0603438F Space Control Technology

(U) C. Program Change Summary ($ in Thousands)

		FY 2002	FY 2003	FY 2004	Total Cost
(U)	Previous President's Budget	32,344	13,814	13,750	TBD
(U)	Appropriated Value	33,022	13,814		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions	-1,421	-146		
	b. Small Business Innovative Research	-1,634			
	c. Omnibus or Other Above Threshold Reprogram		-59		
	d. Below Threshold Reprogram	-1,000			
	e. Rescissions				
(U)	Adjustments to Budget Years Since FY 2003 PBR			964	
(U)	Current Budget Submit/FY 2004 PBR	28,967	13,609	14,714	TBD

(U) Significant Program Changes:
None.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

DATE: February 2003

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

PE NUMBER AND TITLE: 0603438F Space Control Technology

PROJECT: 2611

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
2611	Technology Insertion Planning and Analysis	28,967	13,609	9,409	9,414	9,499	12,555	15,741	20,644	Continuing	TBD

(U) A. Mission Description

This program supports a range of activities including technology planning, development, demonstrations and prototyping, as well as modeling, simulations and exercises to support development of tactics and procedures in the Space Control mission area. The types of Space Control activities accomplished are Space Situational Awareness (SSA) (formally Surveillance), Defensive Counterspace (DCS) (formally Prevention and Protection), and Offensive Counterspace (OCS) (formally Negation). For use in the Space Control mission area, SSA includes monitoring, detecting, identifying, tracking, assessing, verifying, categorizing, and characterizing, objects and events in space. SSA technology development also supports the Space Based Space Surveillance (SBSS) program. DCS includes defensive activities to protect U.S. and friendly space-systems assets, resources, and operations from enemy attempts to negate or interfere and prevention activities that limit or eliminate an adversary's ability to use U.S. space systems and services for purposes hostile to U.S. national security interests. DCS technology development also supports the Rapid Attack Identification Reporting System (RAIDRS). OCS activities disrupt, deny, degrade or destroy an adversary's space systems, or the information they provide, which may be used for purposes hostile to U.S. national security interests. Consistent with DOD policy, the negation efforts of this program focus only on negation technologies which have temporary, localized, and reversible effects.

Budget Activity Justification

This project is in Budget Activity 4, Advanced Component Development and Prototypes because it supports the research, demonstration, component development and prototyping of Space Control technologies.

(U) FY 2002 ($ in Thousands)

(U) $0 Accomplishments/Planned Program

(U) $7,761 Accomplished threat warning and attack reporting AoA. Continued risk reduction activities, such as threat detection and characterization technology demonstrations, 'red team' vulnerability assessments, system architecture development, acquisition planning and preparation to support a Milestone B decision in FY03.

(U) $7,150 Began the development and fielding of a small, mobile/transportable system to counter satellite communication systems. Developed and demonstrated advanced counter communications technologies and techniques.

(U) $9,979 Began development and demonstration of a system to counter surveillance and reconnaissance (SR) satellite systems. Participated in exercises and demonstrations of a counter (SR) system. Completed military utility analysis, risk reduction efforts, and performed pre-concept exploration

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	DATE: February 2003
BUDGET ACTIVITY: 04 - Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE: 0603438F Space Control Technology / PROJECT: 2611

(U) A. Mission Description Continued

(U) FY 2002 ($ in Thousands) Continued

and concept definition, system architecture development, and planning to support FY02 and early FY03 decisions for system development. Continued to develop advanced counter-SR techniques.

(U) $748 Continued development and demonstration of advanced techniques and technologies for space control prevention systems in the laboratory and field begun in FY99 and not funded in FY00/01.

(U) $3,329 Began development of the system architecture and acquisition of Space Control elements of the Space range. Began demonstration of test assets, special test equipment, capabilities and systems required to test, validate, and verify performance of integrated Space Control systems. Developed the test range assets to exercise, train, and develop tactics for Space Control systems.

(U) $28,967 Total

(U) FY 2003 ($ in Thousands)

(U) $0 Accomplishments/Planned Program

(U) $3,000 Continue vulnerability assessments. Includes vulnerabilities of space/link/ground segments of DoD space systems. Perform assessments on new DoD space systems: categorize effects for support to Satellite-As-A-Sensor activities.

(U) $2,897 Continue development and demonstration of advanced counter communications technologies and techniques, to include jam-resistant communications techniques. Begin exploring technologies leading to future generation counter-communications systems and advanced target characteristics.

(U) $2,112 Continue to develop, prototype, and demonstrate advanced counter surveillance, reconnaissance techniques. Begin technology development and demonstration of future generation counter surveillance and reconnaissance capabilities.

(U) $1,500 Continue development and demonstration of advanced techniques and technologies for space control prevention systems in the laboratory and field. Includes techniques and technologies for denying adversary use of blue systems on communications, sensor, and navigation platforms.

(U) $4,100 Continue development of the system architecture and acquisition of Space Control elements of the Space Range. Continue demonstration of test assets, special test equipment, capabilities and systems required to test, validate, and verify performance of integrated Space Control systems. Continue developing the test range assets to exercise, train, and develop tactics for Space Control systems.

(U) $13,609 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	DATE: February 2003
BUDGET ACTIVITY: 04 - Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE: 0603438F Space Control Technology / PROJECT: 2611

(U) A. Mission Description Continued

(U) FY 2004 ($ in Thousands)

(U)	$0	Accomplishments/Planned Program
(U)	$5,267	Defensive Counterspace efforts. Continue vulnerability assessments. Includes vulnerabilities of space/link/ground segments of DoD space systems. Perform assessments on new DoD space systems. Begin looking at protection measures against optical jammers. Continue investigations in key technology areas such as data fusion, data mining, radiation effects, kinetic energy impacts, anomaly resolution. Continue development and demonstration of advanced techniques and technologies for space control prevention systems in the laboratory and field. Includes techniques and technologies for denying adversary use of blue systems on communications, sensor, and navigation platforms. Includes funding for architectural engineering leading to an overall Space Control architecture.
(U)	$3,542	Offensive Counterspace efforts. Continue development and demonstration of advanced counter- communications technologies and techniques, to include bandwidth on demand communications techniques. Continue exploring technologies leading to future generation counter-communications systems and advanced target characteristics. Includes development of countermeasures for insertion into counter-communications weapons systems. Continue development of critical signal processing technology. Continue to develop, prototype, and demonstrate advanced counter surveillance, reconnaissance techniques. Begin technology development and demonstration of future generation counter surveillance and reconnaissance capabilities to include hyper-spectral capabilities. Includes funding for architectural engineering of leading to an overall Space Control architecture. Begin investigations of SAR and radar interference jamming characterization.
(U)	$600	Space Situational Awareness efforts. Continue development of key space situational awareness enabling technologies for monitoring, detecting, identifying, tracking, assessing, verifying, categorizing, and characterizing objects and events in space for use in the Space Control mission area.
(U)	$9,409	Total

(U) B. Project Change Summary

(U) C. Other Program Funding Summary ($ 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
(U) None										

(U) D. Acquisition Strategy

All contracts funded in this program element will be awarded using competitive procedures to the maximum extent possible.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	DATE: February 2003
BUDGET ACTIVITY: 04 - Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE: 0603438F Space Control Technology	PROJECT: 2611

(U) E. Schedule Profile

		FY 2002				FY 2003				FY 2004			
		1	2	3	4	1	2	3	4	1	2	3	4
(U)	AFSPC Space Control Mission Area Plan Completion		*										
(U)	Protection												
(U)	Potential attack reporting solutions and architecture studies complete		*										
(U)	Begin development of threat warning and attack reporting architecture		*										
(U)	Satellite as a Sensor evaluations complete							X					
(U)	Prevention												
(U)	Continue development of advanced techniques and technologies					*						X	
(U)	Evaluate interim report							X					
(U)	Negation												
(U)	Begin Advanced Technology development for negation systems					*							
(U)	Begin development of a Counter-Communications system			*									
(U)	Complete Counter- Surveillance/Recon Military Utility Analysis	*											
(U)	Acquisition decision to enter Counter-SR system development			*									
(U)	New start for Counter-SR system development				*								
(U)	Vulnerability Assessment reports								X				X
(U)	Space Range												
(U)	System acquisition new start		*										
(U)	Continue development of system architecture including SSA elements												
(U)	Continue demonstration of test assets						X						
(U)	Continue developing test range technologies and systems						X						

* = Completed Event X = Scheduled Event

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: February 2003

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

PE NUMBER AND TITLE: 0603438F Space Control Technology

PROJECT: 2611

(U) A. Project Cost Breakdown ($ in Thousands)

		FY 2002	FY 2003	FY 2004
(U)	Surveillance technology assessment (renamed Space Situational Awareness in FY04)	0	0	600
(U)	Protection technology assessment (renamed Defensive Counter Space in FY04)	7,761	3,000	5,267
(U)	Negation technology development (renamed Offensive Counter Space in FY04)		5,009	3,542
(U)	Counter Communications system development (moved to PE 0604421F in FY03)	7,150	0	0
(U)	Counter Surveillance/Reconnaissance technology and system development (moved to PE 0604421F in FY03)	9,979	0	0
(U)	Prevention technology development (FY04 included in DCS)	748	1,500	0
(U)	Space Control Test Range	3,329	4,100	0
(U)	Total	28,967	13,609	9,409

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

(U) Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 2002	Budget FY 2002	Budget FY 2003	Budget FY 2004	Budget to Complete	Total Program
Product Development Organizations										
FFRDC, Various SETA, SPO	Various				15,252	7,560	4,640	4,675	Continuing	TBD
MAPIC	CPAF	Feb 02				12,882	8,049	3,434	Continuing	TBD
AFRL	Various				10,948	6,868	200	400	Continuing	TBD
Support and Management Organizations										
SMC	Various				356	935	720	900	Continuing	TBD
AFRL	Various				0	722	0	0	Continuing	TBD
Test and Evaluation Organizations										

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE: February 2003
BUDGET ACTIVITY: 04 - Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE: 0603438F Space Control Technology / PROJECT: 2611

(U) Government Furnished Property:

Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 2002	Budget FY 2002	Budget FY 2003	Budget FY 2004	Budget to Complete	Total Program
Product Development Property									
None									
Support and Management Property									
None									
Test and Evaluation Property									
None									

Subtotals	Total Prior to FY 2002	Budget FY 2002	Budget FY 2003	Budget FY 2004	Budget to Complete	Total Program
Subtotal Product Development	26,200	27,310	12,889	8,509	TBD	TBD
Subtotal Support and Management	356	1,657	720	900	TBD	TBD
Subtotal Test and Evaluation						
Total Project	26,556	28,967	13,609	9,409	TBD	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

DATE: February 2003

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

PE NUMBER AND TITLE: 0603438F Space Control Technology

PROJECT: A007

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
A007 Space Range	0	0	5,305	6,372	4,669	10,480	14,815	19,631	Continuing	TBD

In FY 2004, Project 2611, Technology Insertion Planning and Analysis was changed to separate activities for ease of description and execution by transferring the Space Range activities into Project A007, Space Range.

(U) A. Mission Description

This program supports the development of test range assets required to support exercises, training, and tactics development for Space Control systems.

Budget Activity Justification

This project is in Budget Activity 4, Advanced Component Development and Prototypes because it supports the research, demonstration, component development and prototyping of Space Control Range technologies

(U) FY 2002 ($ in Thousands)

(U)	$0	Accomplishments/Planned Program
(U)	$0	Activity Accomplished in Project 2611
(U)	$0	Total

(U) FY 2003 ($ in Thousands)

(U)	$0	Accomplishments/Planned Program
(U)	$0	Activity in Project 2611
(U)	$0	Total

(U) FY 2004 ($ in Thousands)

(U)	$0	Accomplishments/Planned Program
(U)	$4,500	Continue development of the system architecture and acquisition of Space Control elements of the Space Range. Continue demonstration of test assets, special test equipment, capabilities and systems required to test, validate, and verify performance of integrated Space Control systems.
(U)	$705	Program Office Support
(U)	$100	Exercise and demonstration support
(U)	$5,305	Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	DATE: February 2003
BUDGET ACTIVITY: 04 - Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE: 0603438F Space Control Technology / PROJECT: A007

(U) B. Project Change Summary

(U) C. Other Program Funding Summary ($ 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
(U) AF RDT&E										
(U) Other APPN										

(U) D. Acquisition Strategy

All contracts funded in this program element will be awarded using competitive procedures to the maximum extent possible.

(U) E. Schedule Profile

	FY 2002				FY 2003				FY 2004			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Continue demonstration of test assets									X	X	X	X
(U) Continue developing test range technologies and systems											X	X

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: February 2003

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

PE NUMBER AND TITLE: 0603438F Space Control Technology

PROJECT: A007

(U) A. Project Cost Breakdown ($ in Thousands)

		FY 2002	FY 2003	FY 2004
(U)	Space Control Test Range development	0	0	4,500
(U)	Program Office	0	0	705
(U)	Exercise and Demonstration Support	0	0	100
(U)	Total	0	0	5,305

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

(U) Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 2002	Budget FY 2002	Budget FY 2003	Budget FY 2004	Budget to Complete	Total Program
Product Development Organizations										
MAPIC					0	0	0	4,500	Continuing	TBD
Support and Management Organizations										
SMC/FFRDC/SETA					0	0	0	805	Continuing	TBD
Test and Evaluation Organizations										
None										

(U) Government Furnished Property:

Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 2002	Budget FY 2002	Budget FY 2003	Budget FY 2004	Budget to Complete	Total Program
Product Development Property									
None									
Support and Management Property									
None									

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE: February 2003
BUDGET ACTIVITY: 04 - Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE: 0603438F Space Control Technology / PROJECT: A007

(U) Government Furnished Property Continued:

Test and Evaluation Property

None

Subtotals	Total Prior to FY 2002	Budget FY 2002	Budget FY 2003	Budget FY 2004	Budget to Complete	Total Program
Subtotal Product Development	0	0	0	4,500	TBD	TBD
Subtotal Support and Management	0	0	0	805	TBD	TBD
Subtotal Test and Evaluation						
Total Project	0	0	0	5,305	TBD	TBD