PE NUMBER: 0603438F
PE TITLE: Space Control Technology

Exhibit R-2, RDT&E Budget Item Justification	DATE February 2004
BUDGET ACTIVITY: 04 Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE: 0603438F Space Control Technology

	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	12.787	14.547	15.046	14.129	22.987	30.542	40.338	Continuing	TBD
2611	Technology Insertion Planning and Analysis	12.787	9.287	8.691	9.473	12.529	15.734	20.676	Continuing	TBD
A007	Space Range	0.000	5.260	6.355	4.656	10.458	14.808	19.662	Continuing	TBD

(U) A. Mission Description and Budget Item Justification

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), Defensive Counterspace (DCS) , and Offensive Counterspace (OCS). 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 developmental and opertational test, exercises, training, and tactics development for space control systems.

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.

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

		FY 2003	FY 2004	FY 2005
(U)	Previous President's Budget	13.609	14.714	15.786
(U)	Current PBR/President's Budget	12.787	14.547	15.046
(U)	Total Adjustments	-0.822	-0.167	
(U)	Congressional Program Reductions		-0.042	
	Congressional Rescissions		-0.125	
	Congressional Increases			
	Reprogrammings			
	SBIR/STTR Transfer	-0.822		
(U)	Significant Program Changes:			

Exhibit R-2, RDT&E Budget Item Justification	DATE February 2004
BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE 0603438F Space Control Technology

None.

Exhibit R-2a, RDT&E Project Justification

DATE: February 2004

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

PE NUMBER AND TITLE: 0603438F Space Control Technology

PROJECT NUMBER AND TITLE: 2611 Technology Insertion Planning and Analysis

	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
2611	Technology Insertion Planning and Analysis	12.787	9.287	8.691	9.473	12.529	15.734	20.676	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0		

(U) A. Mission Description and Budget Item Justification

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), Defensive Counterspace (DCS), and Offensive Counterspace (OCS). 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 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) B. Accomplishments/Planned Program ($ in Millions)	FY 2003	FY 2004	FY 2005
(U) 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 event in space for use in the Space Control mission area.	0.300	3.074	2.500
(U) 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. Include funding for architectural engineering leading to an overall Space Control architecture.	3.254	2.390	2.200
(U) 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. Includ	4.193	2.695	3.007

Exhibit R-2a, RDT&E Project Justification		DATE February 2004
BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE 0603438F Space Control Technology	PROJECT NUMBER AND TITLE 2611 Technology Insertion Planning and Analysis

development of countermeasures for insertion into counter-communications weapons systems. Continue development critical signal processing technology. Continue to develop, prototype, and demonstrate advanced counter surveillance, reconnaissance techniques. Continue technology development and demonstration of future generation counter surveillance and reconnaissance capabilities. Includes funding for architectural engineering leading to an overall Spac Control architecture.

(U)	Continued development of the system architecture and acquisition of Space Control elements of the Space Range. Continued demonstration of test assets, special test equipment, capabilities and systems required to test, validate, and verify performance of integrated Space Control systems. Continued developing the test range assets to exercise, train, and develop tactics for Space Control systems.	3.075		
(U)	Program Office and Other Technical Support	1.965	1.128	0.984
(U)	Total Cost	12.787	9.287	8.691

(U) C. Other Program Funding Summary ($ 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 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.

Exhibit R-3, RDT&E Project Cost Analysis

DATE: February 2004

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

PE NUMBER AND TITLE: 0603438F Space Control Technology

PROJECT NUMBER AND TITLE: 2611 Technology Insertion Planning and Analysis

(U) Cost Categories (Tailor to WBS, or System/Item Requirements) ($ in Millions)	Contract Method & Type	Performing Activity & Location	Total Prior to FY 2003 Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
(U) Product Development												
SSA Development	Various	SMC- El Segundo, CA	3.920	0.300	Oct-02	3.074	Nov-03	2.500	Nov-04	Continuing	TBD	
DCS Activities	Various	Various	13.453	3.254	Oct-02	2.390	Nov-03	2.200	Nov-04	Continuing	TBD	
OCS Development	Various	NRL- Wash DC	32.300	4.193	Oct-02	2.695	Nov-03	3.007	Nov-04	Continuing	TBD	
System Architecture & Range Development	Various	Various	3.920	3.075	Oct-02	0.000					6.995	
Subtotal Product Development			53.593	10.822		8.159		7.707		Continuing	TBD	0.000
Remarks:												
(U) Support												
Program Office and Other Technical Support	Various	SMC- El Segundo, CA	2.013	1.965	Oct-02	1.128		0.984		Continuing	TBD	
None											0.000	
Subtotal Support			2.013	1.965		1.128		0.984		Continuing	TBD	0.000
Remarks:												
(U) Test & Evaluation												
None											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)												
											0.000	
Subtotal			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) Total Cost			55.606	12.787		9.287		8.691		Continuing	TBD	0.000

Exhibit R-4, RDT&E Schedule Profile		DATE: February 2004
BUDGET ACTIVITY: 04 Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE: 0603438F Space Control Technology	PROJECT NUMBER AND TITLE: 2611 Technology Insertion Planning and Analysis

Space Control Technology Schedule

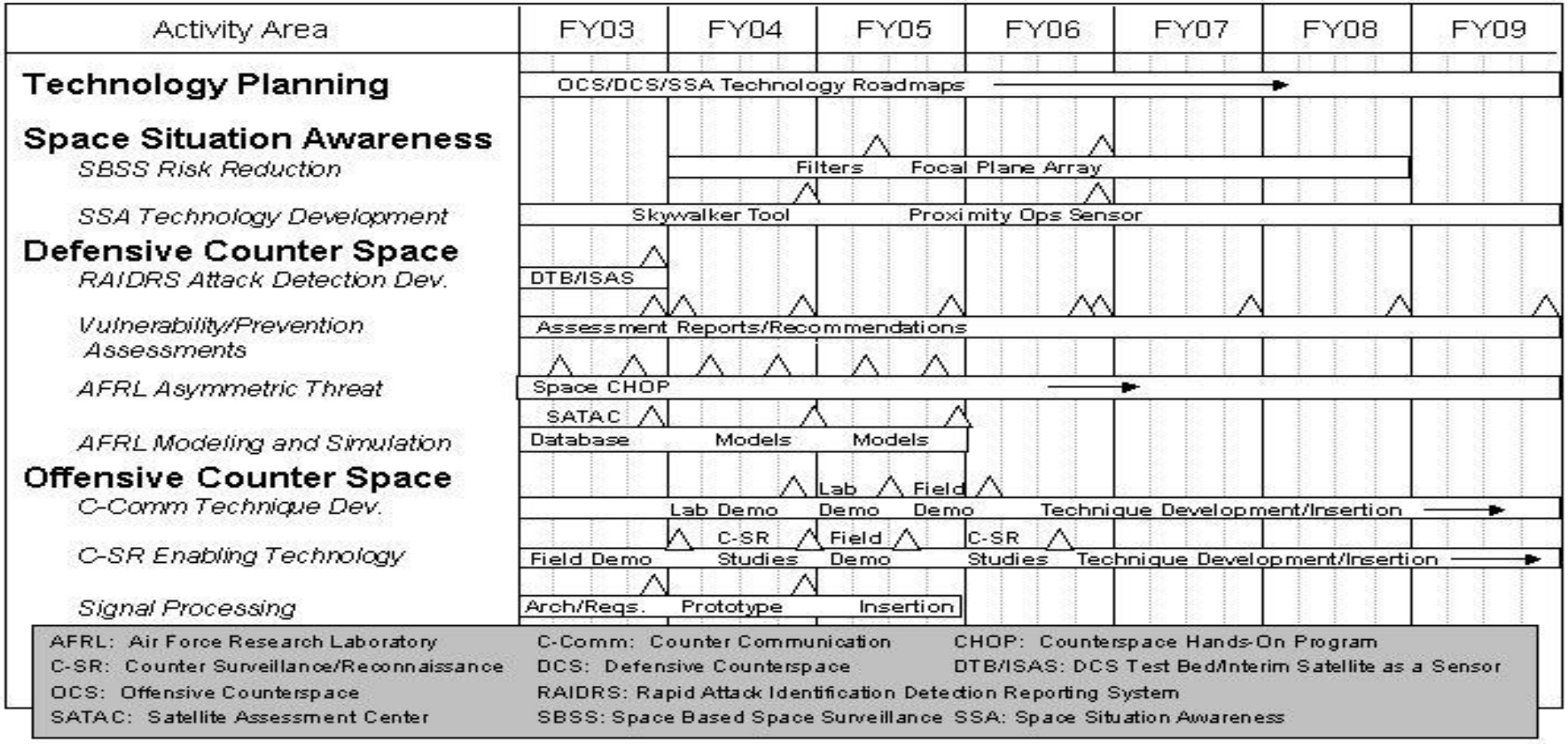

Exhibit R-4a, RDT&E Schedule Detail

DATE: February 2004

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT NUMBER AND TITLE
04 Advanced Component Development and Prototypes (ACD&P)	0603438F Space Control Technology	2611 Technology Insertion Planning and Analysis

(U) **Schedule Profile**	FY 2003	FY 2004	FY 2005
(U) OCS- Continue Counter Communications technique development and demonstration		1-4Q	1-4Q
(U) OCS- Continue Counter Surveillance/Reconnaissance technology development	1-4Q	1-4Q	1-4Q
(U) OCS- Continue Signal Processing development	1-4Q	1-4Q	1-4Q
(U) SSA- SBSS Risk Reduction		1-4Q	1-4Q
(U) SSA- Sensor Development	2-4Q	1-4Q	1-4Q
(U) DCS- Vulnerability assessment reports	1-4Q	1-4Q	1-4Q
(U) DCS- Asymmetric threat assessment	1-4Q	1-4Q	1-4Q
(U) DCS- Prevention	1-4Q		2-4Q
(U) Technology Roadmaps	1-4Q	1-4Q	1-4Q

Exhibit R-2a, RDT&E Project Justification

DATE: February 2004

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

PE NUMBER AND TITLE: 0603438F Space Control Technology

PROJECT NUMBER AND TITLE: A007 Space Range

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
A007	Space Range	0.000	5.260	6.355	4.656	10.458	14.808	19.662	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0		

(U) A. Mission Description and Budget Item Justification

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

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 Test & Training Range technologies & infrastructure.

(U) B. Accomplishments/Planned Program ($ in Millions)	FY 2003	FY 2004	FY 2005
(U) Accomplishments/Planned Program	0.000	0.000	0.000
(U) Threat Simulators	0.000	2.176	3.499
(U) 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.		2.303	2.010
(U) Program Office and Other Technical Support		0.781	0.846
(U) Total Cost	0.000	5.260	6.355

(U) C. Other Program Funding Summary ($ 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 Cost
(U)									

(U) D. Acquisition Strategy

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

Exhibit R-3, RDT&E Project Cost Analysis

DATE: February 2004

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

PE NUMBER AND TITLE: 0603438F Space Control Technology

PROJECT NUMBER AND TITLE: A007 Space Range

(U) Cost Categories (Tailor to WBS, or System/Item Requirements) ($ in Millions)	Contract Method & Type	Performing Activity & Location	Total Prior to FY 2003 Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
(U) Product Development												
MAPIC	CPAF		0.000			2.303	Jan-04	2.010	Dec-04	Continuing	TBD	
TMC	CPAF	Las Cruces, NM				2.176	Jan-04	3.499	Jan-05	Continuing	TBD	
Subtotal Product Development			0.000	0.000		4.479		5.509		Continuing	TBD	0.000
Remarks:												
(U) Support												
Program Office and Other Technical Support	Various	SMC, El Segundo, CA	0.000	0.000		0.381	Jan-04	0.446	Jan-05	Continuing	TBD	
Program Office and Other Technical Support	CPAF	MAPIC, Redondo Beach, CA	0.000	0.000		0.400	Jan-04	0.400	Jan-05	Continuing	TBD	
Subtotal Support			0.000	0.000		0.781		0.846		Continuing	TBD	0.000
Remarks:												
(U) Test & Evaluation												
None											0.000	
None											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			0.000	0.000		5.260		6.355		Continuing	TBD	0.000

Exhibit R-4, RDT&E Schedule Profile		DATE February 2004
BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE 0603438F Space Control Technology	PROJECT NUMBER AND TITLE A007 Space Range

Space Test & Training Range Schedule

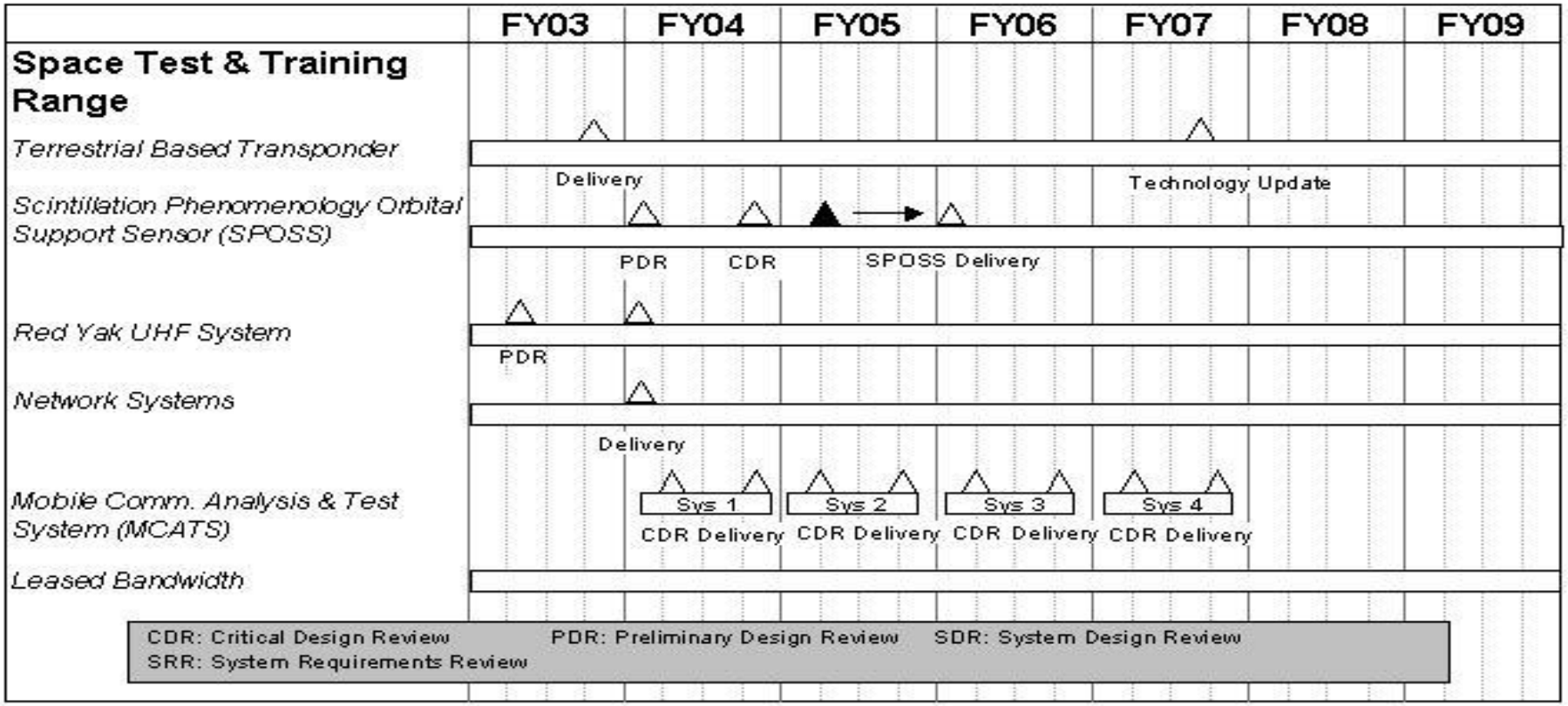

Exhibit R-4a, RDT&E Schedule Detail

DATE: February 2004

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT NUMBER AND TITLE
04 Advanced Component Development and Prototypes (ACD&P)	0603438F Space Control Technology	A007 Space Range

(U) **Schedule Profile**	FY 2003	FY 2004	FY 2005
(U) Develop STTR Architecture	1-4Q	1-4Q	1-4Q
(U) Deliver Terrestrial Based Transponder	4Q		
(U) Continue with Scitillation Phenomonology Support Sensor (SPOSS) Development		2-4Q	1-4Q
(U) Red YAK UHF System	1-4Q	1Q	
(U) Adversary Network Emulator		1Q	
(U) Develop & Deliver Mobile Comm analysis and Test System		2-4Q	2-4Q