Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force										DATE: February 2010	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 4: *Advanced Component Development & Prototypes (ACD&P)*				R-1 ITEM NOMENCLATURE PE 0603438F: *Space Control Technology*							
COST ($ in Millions)	**FY 2009 Actual**	**FY 2010 Estimate**	**FY 2011 Base Estimate**	**FY 2011 OCO Estimate**	**FY 2011 Total Estimate**	**FY 2012 Estimate**	**FY 2013 Estimate**	**FY 2014 Estimate**	**FY 2015 Estimate**	**Cost To Complete**	**Total Cost**
Total Program Element	86.110	100.951	45.012	16.000	61.012	45.907	46.370	46.831	47.160	Continuing	Continuing
642611: *Technology Insertion Planning and Analysis*	64.643	79.187	26.038	16.000	42.038	26.804	26.975	27.141	27.167	Continuing	Continuing
64A007: *Space Range*	21.467	21.764	18.974	0.000	18.974	19.103	19.395	19.690	19.993	Continuing	Continuing

Note

In FY 2011 OCO requested, $16.000M, replaces and upgrades equipment left with Army and Air Force counterspace units in Operation Iraqi Freedom (OIF). This technology was developed by the Rapid Reaction Squadron in response to numerous warfighter Urgent Operational Needs (UONs) and Joint Urgent Operational Needs (JUONs) for OIF.

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) , Offensive Counterspace (OCS) and Command and Control and Battle Management. For use in the Space Control mission area, SSA includes monitoring, detecting, identifying, tracking, assessing, verifying, categorizing, and characterizing, objects and events in space and terrestrial based space capabilities. 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 currently focus on negation technologies which have temporary, localized, and reversible effects. Command & Control efforts include identifying technology solutions to enable fusion of data for use in multi-level security environments, near-real-time data delivery and decision support to war fighter needs. Rapid Reaction Capabilities in response to immediate war fighter needs are developed within this program.

Also supported is the development of the technology and infrastructure 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 operational test, exercises, training, and tactics development for space control systems. A collaborative command & control capability will be integrated into several range systems to provide real time communications during test event scenarios.

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0603438F: *Space Control Technology*

As a result of an FY08 $25M congressional add, the Air Force began the Self Awareness Space Situation Awareness (SASSA) technology demonstration that will build a payload to provide tactical SSA around a host satellite. SASSA is designed to demonstrate the ability to detect attacks, locate attacking sources, and communicate relevant information to the ground. SASSA will contain a suite of threat warning sensors designed to address a range of anti-satellite and environmental threats. SASSA will also have a communication package and common interface unit that eases integration and performs on-board sensor data processing. The interface unit and sensors can be configured into tailored sensing payloads for future space missions.

Spacetrack Integration Node Global Enhanced Reporting (STINGER) project converts an enhanced processing capability developed for missile warning radar to use for the space situation awareness program radars.

These 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.

B. Program Change Summary ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Previous President's Budget	86.110	97.701	0.000	0.000	0.000
Current President's Budget	86.110	100.951	45.012	16.000	61.012
Total Adjustments	0.000	3.250	45.012	16.000	61.012
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		4.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	-0.750	45.012	16.000	61.012

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2009	FY 2010
Project: 642611: *Technology Insertion Planning and Analysis*		
Congressional Add: *Commercial Off-the Shelf (COTS) for Space Situation Awareness (SSA).*	2.800	0.000
Congressional Add: *SSA Tactical Component Network (TCN) Demonstration.*	3.000	0.000

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0603438F: *Space Control Technology*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2009	FY 2010
Congressional Add: *Multi-mission Deployable Optical System (MDOS).*	4.000	0.000
Congressional Add: *Space Situational Awareness*	0.000	4.000
Congressional Add: *High Accuracy Network Determination System/Intelligent Optical Networks for SSA (HANDS/IONS).*	0.000	0.000
Congressional Add Subtotals for Project: 642611	9.800	4.000
Congressional Add Totals for all Projects	9.800	4.000

Change Summary Explanation

FY 2010: + $4.0M for Space Situation Awareness
FY 2010: - $0.750M for FFRDC
FY 2010: Air Force requested technical adjustment to the database transferring $5M from PE 0604425F to PE 0603438F for High Accuracy Network Determination System (HANDS)
FY 2011: The FY 2010 President's Budget submittal did not reflect FY2011 through FY 2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner.

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force			DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603438F: *Space Control Technology*	PROJECT 642611: *Technology Insertion Planning and Analysis*	

COST ($ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
642611: *Technology Insertion Planning and Analysis*	64.643	79.187	26.038	16.000	42.038	26.804	26.975	27.141	27.167	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY 2011 OCO requested, $16.000M, replaces and upgrades equipment left with Army and Air Force counterspace units in Operation Iraqi Freedom (OIF). This technology was developed by the Rapid Reaction Squadron in response to numerous warfighter Urgent Operational Needs (UONs) and Joint Urgent Operational Needs (JUONs) for OIF.

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) , Offensive Counterspace (OCS) and Command and Control and Battle Management. For use in the Space Control mission area, SSA includes monitoring, detecting, identifying, tracking, assessing, verifying, categorizing, and characterizing, objects and events in space and terrestrial based space capabilities. 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 currently focus on negation technologies which have temporary, localized, and reversible effects. Command & Control efforts include identifying technology solutions to enable fusion of data for use in multi-level security environments, near-real-time data delivery and decision support to warfighter needs. Rapid Reaction Capabilities in response to immediate warfighter needs are developed within this program.

As a result of an FY08 $25M Congressional add, the Air Force began the Self Awareness Space Situation Awareness (SASSA) technology demonstration that will build a payload to provide tactical space situational awareness (SSA) around a host satellite. SASSA is designed to demonstrate the ability to detect attacks, locate attacking sources, and communicate relevant information to the ground. SASSA will contain a suite of threat warning sensors designed to address a range of anti-satellite and environmental threats. SASSA will also have a communication package and common interface unit that eases integration and performs on-board sensor data processing. The interface unit and sensors can be configured into tailored sensing payloads for future space missions.

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603438F: *Space Control Technology*	PROJECT 642611: *Technology Insertion Planning and Analysis*

Spacetrack Integration Node Global Enhanced Reporting (STINGER) project converts an enhanced processing capability developed for missile warning radar to use for the space situation awareness program radars.

These 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.

B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Space Situational Awareness efforts such as key space situational awareness enabling technologies, space sensor value modeling and architecture analysis. *FY 2009 Accomplishments:* In FY 2009: Developed testing methodology to verify SBSS requirements are considered as part of AFRL Focal Plane Array developments. *FY 2010 Plans:* In FY 2010: Continue analysis to support proximity Indications and Warnings sensor trade space. Generating multi-community requirements sets for use in assessing solution options. *FY 2011 Base Plans:* In FY 2011: Continuing optical sensor evaluations to augment the Space Surveillance Network, and Space Object Identification missions. *FY 2011 OCO Plans:* In FY 2011 OCO: Not applicable	3.200	2.760	3.000	0.000	3.000
MAJOR THRUST: Defensive Counterspace efforts. Continue development of key defensive counterspace enabling technologies. *FY 2009 Accomplishments:* In FY 2009: Continued vulnerability assessments, development and demonstration of advanced techniques and technologies for space control prevention systems.	10.897	9.796	5.044	0.000	5.044

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603438F: *Space Control Technology*	PROJECT 642611: *Technology Insertion Planning and Analysis*

B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2010 Plans: In FY 2010: Continuing asymmetric threat vulnerability and analysis in support of Space and Missile Center and partnered acquisition developments. *FY 2011 Base Plans:* In FY 2011: Continuing proximity Indications and Warnings (I&W) sensor development. Procuring initial components for performance validation and integration and test development. Planning for follow-on qualifications and flight testing. *FY 2011 OCO Plans:* In FY 2011 OCO: Not applicable					
MAJOR THRUST: Space Protection Program. Air Force/NRO partnership to leverage resources to establish and execute a program to develop an integrated space protection approach for the nation *FY 2009 Accomplishments:* In FY 2009: Not applicable. *FY 2010 Plans:* In FY 2010: Began capability-based vulnerability and susceptibility assessments of blue architectures to identify options to enhance the survivability of the overall space architecture. Established a capabilities and Interdependencies (C&I) analysis team to keep a current database to provide senior leaders with understanding of space capabilities, interdependencies and consequence of loss in support of planning an decision making. *FY 2011 Base Plans:* In FY 2011: Transferred to new PE 060380F, Space Protection Program	0.000	6.486	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2011 OCO Plans: In FY 2011 OCO: Not applicable					
MAJOR THRUST: Continue Counterspace C2 efforts *FY 2009 Accomplishments:* In FY 2009: Initiated data fusion initiatives to assist in determining decision support options for space control missions. Executing Upstream Data Fusion (UDF) and Multi-Hypothesis Tracking (MHT) contracts for decision support. *FY 2010 Plans:* In FY 2010: Continuing MHT and UDF task execution, with completion expected towards the end of CY 2010. Analyzing space control mission needs for continued C2 efforts in support of ESC mission transition earlier in the year. *FY 2011 Base Plans:* In FY 2011: Continue supporting C2 needs with respect to the Space Control mission area. Develop technology solutions as identified by warfighters and MAJOCOM to support integration of Space Control sensors and dat elements. *FY 2011 OCO Plans:* In FY 2011 OCO: Not applicable	1.197	1.300	1.400	0.000	1.400
MAJOR THRUST: Continue to conduct prototyping, demonstration, testing, and rapid transition of technology and techniques to space control systems. *FY 2009 Accomplishments:* In FY 2009: Developed and delivered space superiority capabilities to answer warfighter Urgent Operational Needs (UON) and Joint Urgent Operational Needs (JUON) with rapid developmental	5.681	5.957	5.486	16.000	21.486

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
capabilities. Supplemented other counter communications capabilities to support immediate warfighter needs. *FY 2010 Plans:* In FY 2010: Developing advanced capabilities in response to warfighter JUONs. Integrating and testing for new advanced techniques and technologies. Evaluating methods and technologies to answer two new USSTRACOM Evaluation Request Messages (EReqMs). Developing techniques/ technologies for further expansion of current warfighter capabilities. *FY 2011 Base Plans:* In FY 2011: Will develop and test quick reaction capabilities to satisfy the UONS, JUONs and EReqMs received from USSTRATCOM and other warfighting commands. *FY 2011 OCO Plans:* In FY 2011 (OCO): Replaces and upgrades equipment left with Army and Air Force counterspace units in Operation Iraqi Freedom required to develop unit capability to respond to immediate warfighter needs. The Rapid Reaction Squadron responded to numerous warfighter Urgent Operational Needs (UONs) and Joint Urgent Operational Needs (JUONs) for OIF. This funding replenishes the squadron's development capabilities for response to future urgent requirements.					
MAJOR THRUST: Self Awareness Space Situational Awareness (SASSA). *FY 2009 Accomplishments:* In FY 2009: Develop the SASSA payload, integration on a bus and on-orbit test of a SASSA payload. *FY 2010 Plans:* In FY 2010: Continue development of the payload, integration on a bus for on-orbit demonstration of space protection capabilities. Deliver SASSA payload for beginning integration at the end of FY 2010.	25.000	24.623	2.100	0.000	2.100

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2011 Base Plans: In FY 2011: Complete SASSA integration in preparation for launch and on-orbit demonstration in FY 2012 and 2013. *FY 2011 OCO Plans:* In FY 2011 OCO: Not applicable					
MAJOR THRUST: SASSA II risk reduction. *FY 2009 Accomplishments:* In FY2009: Not applicable *FY 2010 Plans:* In FY 2010: Begin risk reduction studies and technology maturation efforts in order to be positioned to capitalize on the results of the SASSA demonstration for future sensor development and deployment. *FY 2011 Base Plans:* In FY 2011: Not Applicable *FY 2011 OCO Plans:* In FY 2011 OCO: Not applicable	0.000	9.850	0.000	0.000	0.000
MAJOR THRUST: Spacetrack Integration Node Global Enhanced Reporting (STINGER). Conversion of an enhanced processing capability developed for missile warning radar *FY 2009 Accomplishments:* In FY 2009: Not applicable	0.000	4.432	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2010 Plans: In FY 2010: Conversion of an enhanced processing capability developed for missile warning radar to use for the space situation awareness program radars. *FY 2011 Base Plans:* In FY 2011: Not applicable *FY 2011 OCO Plans:* In FY 2011 OCO: Not applicable					
MAIN THRUST: Program Office and Other Technical Support (includes System Engineering, studies and analysis, and Architectural Support) *FY 2009 Accomplishments:* In FY 2009: Provides Program Office and Other Technical Support including System Engineering and Architectural Support. *FY 2010 Plans:* In FY 2010: Provides Program Office and Other Technical Support including System Engineering and Architectural Support. *FY 2011 Base Plans:* In FY 2011: Provides Program Office and Other Technical Support including System Engineering and Architectural Support. *FY 2011 OCO Plans:* In FY 2011 OCO: Not applicable	8.868	9.983	9.008	0.000	9.008
Accomplishments/Planned Programs Subtotals	54.843	75.187	26.038	16.000	42.038

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603438F: *Space Control Technology*	PROJECT 642611: *Technology Insertion Planning and Analysis*

B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010
Congressional Add: Commercial Off-the Shelf (COTS) for Space Situation Awareness (SSA). *FY 2009 Accomplishments:* In FY 2009: Integrate modeling and simulation (M&S) for SSA analysis at the physics-to-engineering-to-mission/campaign levels to quantify technology performance, utility, and quality of service. Advance the state-of-the-art and demonstrate the cost effectiveness and technological merit of using COTS modeling, simulation and analysis technology for analyses to quantify space-based SSA technology performance and quality of service. *FY 2010 Plans:* In FY 2010: Not applicable.	2.800	0.000
Congressional Add: SSA Tactical Component Network (TCN) Demonstration. *FY 2009 Accomplishments:* In FY 2009: Integration of existing Missile Defense Agency ground based sensors into the current Space Situational Awareness decision architecture to provide significant near term SSA enhancement. Began evaluation of the MDA UHF and X-band sensing capabilities for possible inclusion in the AF SSA architecture. *FY 2010 Plans:* In FY 2010: Not applicable.	3.000	0.000
Congressional Add: Multi-mission Deployable Optical System (MDOS).	4.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010
FY 2009 Accomplishments: In FY 2009: Demonstrate the feasibility of integrating multiple advanced SSA technologies into a transportable package (air, sea, land) that can be operated from remote field sites. Completed the procurement of the primary mirror, gimbal, and E/O components. Integrated and tested the telescope and gimbal and procured and integrated imaging optics. Developed software for real-time control and post-processing of images. Tested performance under required environmental (daytime) conditions. *FY 2010 Plans:* In FY 2010: Not applicable.		
Congressional Add: Space Situational Awareness *FY 2009 Accomplishments:* In FY 2009: Not applicable *FY 2010 Plans:* In FY 2010: Space Situational Awareness	0.000	4.000
Congressional Add: High Accuracy Network Determination System/Intelligent Optical Networks for SSA (HANDS/IONS). *FY 2009 Accomplishments:* In FY 2009: Not applicable *FY 2010 Plans:* In FY 2010: Continues work begun in a JCTD for a network of three small telescopes equiped with both visible and IR sensors for weather mitigation, continuity-of-operations and collaberative space object observations. High Accuracy Network Determination system (HANDS). Congressionally added funding ($5.0M) improperly applied to PE0606425F but will be executed in this program.	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010
Congressional Adds Subtotals	9.800	4.000

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE Not Provided (3766): *None*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

All contracts funded in this program element will be awarded using competitive procedures to the maximum extent possible. Program consists of numerous small projects.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603438F: *Space Control Technology*	PROJECT 642611: *Technology Insertion Planning and Analysis*

Product Development ($ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SSA Development	Various/ Various	Various Various	32.201	12.496	Jan 2010	3.000	Jan 2011	0.000		3.000	Continuing	Continuing	Continuing
DCS Activities	Various/ Various	Various Various	53.258	9.796	Jan 2010	5.044	Jan 2011	0.000		5.044	Continuing	Continuing	Continuing
Counterspace C2	Various/ Various	Various Various	1.197	1.300	Jan 2010	1.400	Jan 2011	0.000		1.400	Continuing	Continuing	Continuing
Counterspace Technology Prototyping	Various/ Various	Various Various	17.300	5.957	Jan 2010	5.486	Jan 2011	16.000	Jan 2011	21.486	Continuing	Continuing	Continuing
SASSA Tech Demo	Various/ Various	Various Various	50.000	24.623	Jan 2010	2.100	Jan 2011	0.000		2.100	0.000	76.723	75.000
SASSA Risk Reduction	TBD/TBD	TBD TBD	0.000	9.850	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
STINGER	TBD/TBD	TBD TBD	0.000	4.432	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
		Subtotal	153.956	68.454		17.030		16.000		33.030			

Remarks

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603438F: *Space Control Technology*	PROJECT 642611: *Technology Insertion Planning and Analysis*

Support ($ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineering and Architectural Support	C/CPAF	Northrup Grumman Redondo Beach, CA	6.436	3.819	May 2010	3.996	May 2011	0.000		3.996	Continuing	Continuing	Continuing
Program Office and Other Technical Support	Various/ Various	SMC El Segundo, CA	20.107	6.914	Jan 2010	5.012	Jan 2011	0.000		5.012	Continuing	Continuing	Continuing
		Subtotal	26.543	10.733		9.008		0.000		9.008			

Remarks

	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	180.499	79.187		26.038		16.000		42.038			

Remarks

Total Prior Years Cost may include only FY 2009 data.

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603438F: *Space Control Technology*	PROJECT 642611: *Technology Insertion Planning and Analysis*

SCT
Schedule: Technology Insertion

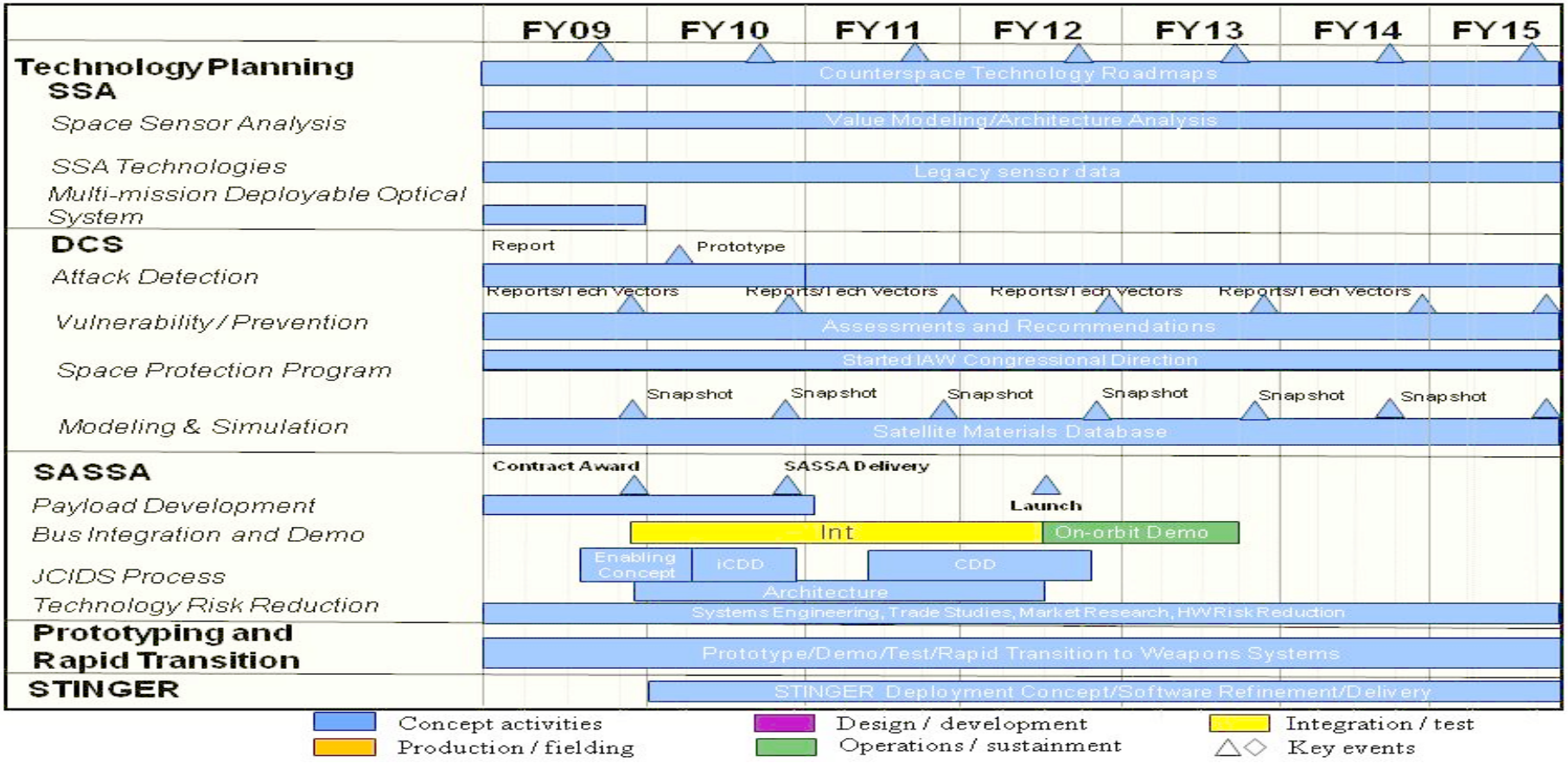

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0603438F: *Space Control Technology*	**PROJECT** 642611: *Technology Insertion Planning and Analysis*

Schedule Details

	Start		End	
Event	**Quarter**	**Year**	**Quarter**	**Year**
Continue Technology Roadmaps & Planning	1	2009	4	2011
SSA- Continue sensor development	1	2009	4	2011
SSA - Multi-mission Deployable Optical System Prototype	1	2009	4	2009
DCS - Continue DCS technology development and evaluation	1	2009	4	2011
DCS - Continue Vulnerability and threat assessment report	1	2009	4	2011
DCS - Continue AFRL Modelling and Simulation	1	2009	4	2011
Prototyping and Rapid Transition to Weapons Systems	1	2009	4	2011
STINGER processing integration for SSA radar systems	1	2010	4	2010
SASSA Contract Definition and Award	1	2009	1	2009
SASSA Sensor Delivery	4	2010	4	2010
SASSA Integration	4	2009	2	2011

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force			DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603438F: *Space Control Technology*	PROJECT 64A007: *Space Range*	

COST ($ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
64A007: *Space Range*	21.467	21.764	18.974	0.000	18.974	19.103	19.395	19.690	19.993	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This program supports the development of space test and training range capabilities required to support developmental and operational test, training, exercises and tactics development for Space Control systems and related architecture. 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 operational test, exercises, training, and tactics development for space control systems. A collaborative command & control capability will be integrated into several range systems to provide real time communications during test event scenarios.

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.

B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Range Control - Development and acquisition of mobile, transportable, and fixed range monitoring and communications capabilities for the space range	8.966	12.664	11.500	0.000	11.500
FY 2009 Accomplishments: In FY 2009: Developed evolutionary acquisition upgrade strategy approved by MDA. Developed STTR test-bed for Space Range Operations Center (SROC) as well as a test-bed for risk reduction of space range signal monitoring unit (SMU). Began development of the range scheduling tool, Space Center Scheduling Enterprise (S-CSE).					

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2010 Plans: In FY 2010: Transitioning from SROC Test-bed into the SROC. Conducting DT/OT and preparing to make the new system operational. Transition from the SMU test-bed into fully operational COTS/ GOTS system integrated inside the SROC. Deliver the first phase of S-CSE. *FY 2011 Base Plans:* In FY 2011: Planning initial delivery of the SROC early in the FY. Completing additional upgrades to deliver a fully capable SROC system with deployable/transportable capability. Complete SMU integration into the SROC. Beginning the second phase of S-CSE. *FY 2011 OCO Plans:* In FY 2011 OCO: Not applicable					
MAJOR THRUST: STTR Leased Bandwith from commercial vendors. *FY 2009 Accomplishments:* In FY 2009: Providing required space range satellite communications bandwidth for exercise, testing and training of both offensive and defensive space control systems on the space range. *FY 2010 Plans:* In FY 2010: Providing required space range satellite communications bandwidth for exercise, testing and training of both offensive and defensive space control systems on the space range. *FY 2011 Base Plans:* In FY 2011: Providing required space range satellite communications bandwidth for exercise, testing and training of both offensive and defensive space control systems on the space range. *FY 2011 OCO Plans:* In FY 2011 OCO: Not applicable	3.081	3.000	3.000	0.000	3.000

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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Program Office and Other Technical Support. *FY 2009 Accomplishments:* In FY 2009: Provides program office and other technical support including systems engineering and architectural support. *FY 2010 Plans:* In FY 2010: Provides program office and other technical support including systems engineering and architectural support. *FY 2011 Base Plans:* In FY 2011: Provides program office and other technical support including systems engineering and architectural support. *FY 2011 OCO Plans:* In FY 2011 OCO: Not applicable	9.420	6.100	4.474	0.000	4.474
Accomplishments/Planned Programs Subtotals	21.467	21.764	18.974	0.000	18.974

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE Not Provided (4159): *None*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

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

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force			DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603438F: *Space Control Technology*	PROJECT 64A007: *Space Range*	

Product Development ($ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Leased Bandwidth	TBD/TBD	DISA Washington, DC	3.081	3.000	Feb 2010	3.000	Feb 2011	0.000		3.000	Continuing	Continuing	Continuing
STTR Upgrade (Execution Test Center)	C/CPAF	Harris Corp Melbourne, FL	6.545	3.558	Nov 2009	0.000		0.000		0.000	0.000	10.103	9.824
Execution Test Center Transition into SROC	C/CPAF	Harris Corp Melbourne, FL	0.000	5.860	Nov 2009	5.870	Nov 2010	0.000		5.870	Continuing	Continuing	Continuing
STTR Transportable	C/CPAF	Harris Corp Melbourne, FL	0.000	0.000		0.500	Nov 2010	0.000		0.500	Continuing	Continuing	Continuing
STTR Training Suite	C/CPAF	Harris Corp Melbourne, FL	0.292	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Signal Generation, Monitoring and Collection	C/CPFF	Harris Corp Melbourne, FL	2.183	2.500	Nov 2009	2.000	Nov 2010	0.000		2.000	Continuing	Continuing	Continuing
Automated Scheduling Software Tool	TBD/TBD	Various Various	0.150	0.742	Nov 2009	0.500	Nov 2010	0.000		0.500	Continuing	Continuing	Continuing
STTR Tech Refresh	TBD/TBD	Various Various	0.407	0.000		1.630	Mar 2011	0.000		1.630	Continuing	Continuing	Continuing
Advanced Capabilities Environment (ACE)	C/CPAF	Harris Corp Melbourne, FL	0.000	0.000		0.500	Nov 2010	0.000		0.500	Continuing	Continuing	Continuing
STTR Studies and Analysis	C/CPFF	Harris Corp Melbourne, FL	1.762	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
		Subtotal	14.420	15.660		14.000		0.000		14.000			

Remarks

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603438F: *Space Control Technology*	PROJECT 64A007: *Space Range*

Support ($ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Office and Other Technical Support	Various/ Various	SMC El Segundo, CA	16.646	6.104	Nov 2009	4.474	Nov 2010	0.000		4.474	Continuing	Continuing	Continuing
		Subtotal	16.646	6.104		4.474		0.000		4.474			

Remarks

Test and Evaluation ($ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SROC Test and Evaluation	TBD/TBD	TBD TBD	0.000	0.000		0.500		0.000		0.500	0.000	0.500	0.000
		Subtotal	0.000	0.000		0.500		0.000		0.500	0.000	0.500	0.000

Remarks

	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	31.066	21.764		18.974		0.000		18.974			

Remarks

Total Prior Years Cost may include only FY 2009 data.

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603438F: *Space Control Technology*	PROJECT 64A007: *Space Range*

STTR Program Schedule

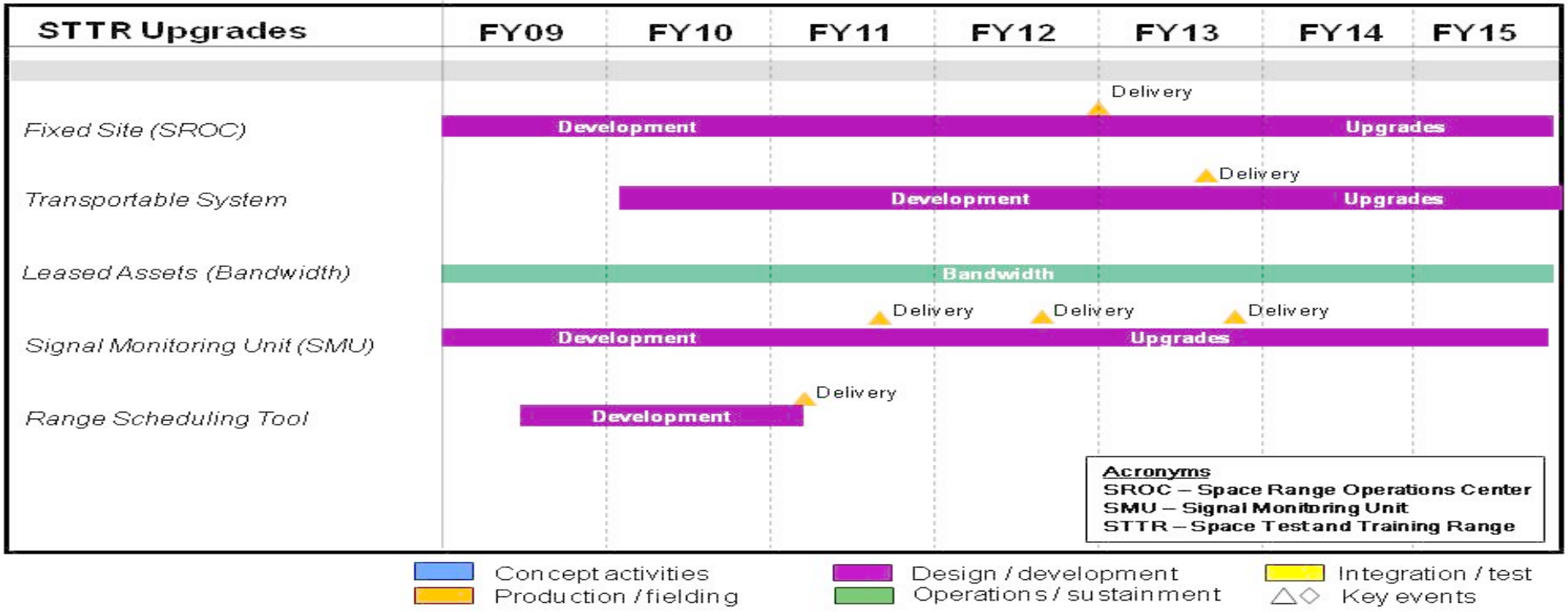

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603438F: *Space Control Technology*	PROJECT 64A007: *Space Range*

Schedule Details

	Start		End	
Event	Quarter	Year	Quarter	Year
Deliver Leased Assets	1	2009	4	2011
Upgrade Transportable System	1	2011	4	2011
Develop fixed-site capability (SROC)	1	2009	4	2011
Signal monitoring and collection (SMU)	1	2009	4	2011
Signal Monitoring Unit Delivery (SMU)	4	2011	4	2011
Range Scheduling Software Tool	1	2009	4	2010
Range Scheduling Software Tool Delivery	1	2011	1	2011