

UNCLASSIFIED

PE NUMBER: 0604421F
 PE TITLE: Counterspace Systems

Exhibit R-2, RDT&E Budget Item Justification	DATE May 2009
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BUDGET ACTIVITY 05 System Development and Demonstration (SDD)	PE NUMBER AND TITLE 0604421F Counterspace Systems
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Cost (\$ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost	59.379	76.147	64.248	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
A001 Counter Satellite Communications System	15.614	29.662	31.109	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
A003 Rapid Identification Detection and Reporting System (RAIDRS)	33.692	37.464	25.816	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
A005 Counterspace C2	10.073	9.021	7.323	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
A024 RAIDRS Block 20	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Program 65A024, RAIDRS Block 20 content and funding were transferred to PE 0305614F, Joint Space Operations Center (JSpOC) Mission Systems effective in FY 2010

(U) A. Mission Description and Budget Item Justification

This program supports the conduct of critical planning, technology insertion, and system acquisition in support of Air Force space control systems and associated command and control development to meet current and future military space control needs. Development and acquisition of counterspace systems will be conducted, capitalizing on the technology development and risk reduction efforts of PE 0603438F, Space Control Technology. This funding supports all development phases of the acquisition process including concept development, risk reduction, design, and demonstration. Space control systems include both offensive counterspace (OCS) and defensive counterspace (DCS) systems. OCS systems include the means to 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. DCS systems include both active and passive measures to protect U.S. and friendly space related capabilities (satellites, communications links, and supporting ground systems) from enemy attack or interference. This includes development efforts to prevent adversarial ability to use U.S. space systems and services for purposes hostile to U.S. national security interests. Counterspace Command and Control (C2) supports the development of command and control and mission planning capabilities in support of the fielding and employment of counterspace systems.

This program is in Budget Activity 5, System Development and Demonstration, because it supports the demonstration, engineering and manufacturing development of counterspace and space control systems.

Exhibit R-2, RDT&E Budget Item Justification

DATE

May 2009

BUDGET ACTIVITY

05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE

0604421F Counterspace Systems

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

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) Previous President's Budget	63.819	74.918	81.116
(U) Current PBR/President's Budget	59.379	76.147	64.248
(U) Total Adjustments	-4.440	1.229	
(U) Congressional Program Reductions		-0.371	
Congressional Rescissions			
Congressional Increases		1.600	
Reprogrammings	-0.500		
SBIR/STTR Transfer	-3.940		
(U) <u>Significant Program Changes:</u>			
FY 2008: -\$.500M transferred to higher priority Air Force programs			
FY 2009: +\$1.600M Congressional addition for Space Control Test Capability			
FY 2010: RAIDRS Block 20 transferred to PE 0305614F, JSpOC Mission Systems			

UNCLASSIFIED

Exhibit R-2a, RDT&E Project Justification

DATE
May 2009

BUDGET ACTIVITY 05 System Development and Demonstration (SDD)					PE NUMBER AND TITLE 0604421F Counterspace Systems			PROJECT NUMBER AND TITLE A001 Counter Satellite Communications System		
Cost (\$ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
A001 Counter Satellite Communications System	15.614	29.662	31.109	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		

(U) A. Mission Description and Budget Item Justification

This effort supports concept exploration and follow-on system development of mobile/transportable counter satellite communications capabilities derived from technologies prototyped in PE0603438F, Space Control Technology, in the area of Offensive Counter Space. Future advanced counter satellite communications systems will also be developed in this program. Included are: architecture engineering, system hardware design and development, software design and integration, testing and procurement of capabilities to provide disruption of satellite communications signals in response to USSTRATCOM requirements.

This program is in Budget Activity 5, System Development and Demonstration, because it supports the demonstration, engineering and manufacturing development of counterspace and space control systems.

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

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) Continue Block 10 Capability Upgrades	1.621	8.202	0.800
(U) Study/refine, develop, prototype risk reduction, integrate, test and field the next Block (Block 20) advanced counter communications capability	7.930	11.486	20.340
(U) Architecture Development Support	2.045	2.805	2.830
(U) Program Office and other Technical Support, to include technical support, studies, systems engineering and integration	4.018	7.169	7.139
(U) Total Cost	15.614	29.662	31.109

(U) C. Other Program Funding Summary (\$ in Millions)

	<u>FY 2008</u> <u>Actual</u>	<u>FY 2009</u> <u>Estimate</u>	<u>FY 2010</u> <u>Estimate</u>	<u>FY 2011</u> <u>Estimate</u>	<u>FY 2012</u> <u>Estimate</u>	<u>FY 2013</u> <u>Estimate</u>	<u>FY 2014</u> <u>Estimate</u>	<u>FY 2015</u> <u>Estimate</u>	<u>Cost to</u> <u>Complete</u>	<u>Total Cost</u>
(U) OPAF (PE 0604421F) Counterspace Systems	0.000	8.881	4.000						Continuing	TBD

(U) D. Acquisition Strategy

All contracts funded in this program element will be awarded using competitive procedures to the maximum extent possible, to upgrade existing capabilities as well as to acquire next generation capabilities through incremental acquisitions.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis

DATE

May 2009

BUDGET ACTIVITY				PE NUMBER AND TITLE					PROJECT NUMBER AND TITLE			
05 System Development and Demonstration (SDD)				0604421F Counterspace Systems					A001 Counter Satellite Communications System			
<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 2008 Cost</u>	<u>FY 2008 Cost</u>	<u>FY 2008 Award Date</u>	<u>FY 2009 Cost</u>	<u>FY 2009 Award Date</u>	<u>FY 2010 Cost</u>	<u>FY 2010 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
<u>(U) Product Development</u>												
Architectural Engineering Support	Various	Various	23.356	2.045	Dec-07	2.805	Jan-09	2.830	Jan-10	Continuing	TBD	TBD
Block 10 Capability Upgrades	CPAF	Harris Corp, Melbourne, FL	7.862	0.298	Feb-08	0.000		0.000		0.000	8.160	7.862
Block 10 Capability Upgrades	CPAF	General Dynamics, Santa Clara, CA	0.515	1.323	Jan-08	6.667	Jan-09	0.800	Jan-10	Continuing	TBD	TBD
Block 20 Prototype Development & Future Capability Studies	Various	Various	2.197	7.930	Dec-07	2.312	Dec-08	0.378	Dec-09	0.000	12.817	13.371
Block 20 Prototype Development & Future Capability Studies	CPAF	SI International, Colorado Springs, CO	0.000	0.000		9.174	Oct-08	0.816	Oct-09	0.000	9.990	11.422
Block 20 Development	TBD	TBD	0.000	0.000		0.000		19.146	Jan-10	Continuing	TBD	TBD
Subtotal Product Development			33.930	11.596		20.958		23.970		Continuing	TBD	TBD
Remarks:												
<u>(U) Support</u>												
System Program Office Support	Various	SMC, El Segundo, CA	9.948	4.018	Oct-07	7.169	Oct-08	7.139	Nov-09	Continuing	TBD	TBD
Subtotal Support			9.948	4.018		7.169		7.139		Continuing	TBD	TBD
Remarks:												
<u>(U) Test & Evaluation</u>												
CCS Block 10 Test Support	Various	SMC, El Segundo, CA	0.100	0.000		1.535	Nov-08			Continuing	TBD	TBD
Subtotal Test & Evaluation			0.100	0.000		1.535		0.000		Continuing	TBD	TBD
Remarks:												
<u>(U) Management</u>												
Subtotal Management			0.000	0.000		0.000		0.000		Continuing	TBD	TBD
Remarks:										Continuing	TBD	TBD
<u>(U) Total Cost</u>			43.978	15.614		29.662		31.109		Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile

DATE
May 2009

BUDGET ACTIVITY
05 System Development and Demonstration (SDD)

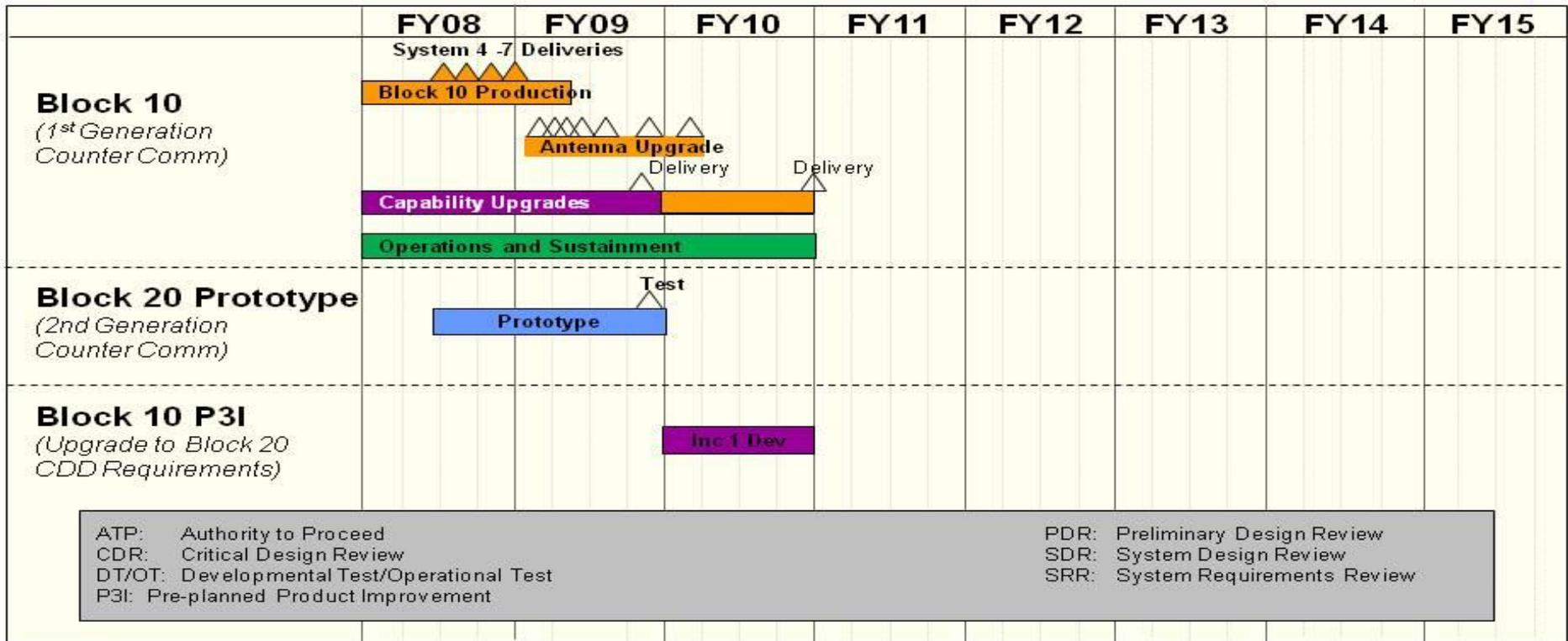
PE NUMBER AND TITLE
0604421F Counterspace Systems

PROJECT NUMBER AND TITLE
A001 Counter Satellite
Communications System



U.S. AIR FORCE

Counterspace Systems CCS Schedule



ATP: Authority to Proceed
 CDR: Critical Design Review
 DT/OT: Developmental Test/Operational Test
 P3I: Pre-planned Product Improvement

PDR: Preliminary Design Review
 SDR: System Design Review
 SRR: System Requirements Review

- Concept activities
- Design/development
- Integration/test
- Operations/sustainment
- Production/fielding
- Key events

UNCLASSIFIED

Exhibit R-4a, RDT&E Schedule Detail

DATE

May 2009

BUDGET ACTIVITY

05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE

0604421F Counterspace Systems

PROJECT NUMBER AND TITLE

**A001 Counter Satellite
Communications System**

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) <u>Schedule Profile</u>			
(U) Capability Upgrades	1-4Q	1-4Q	
(U) Block 10 Production	1-4Q	1-2Q	
(U) Block 10 Deliveries	2-4Q	1-2Q	
(U) Block 20 Prototype Development	2-4Q	1-4Q	
(U) Block 20 Prototype Demo		4Q	
(U) Block 20 Contract Award			3Q
(U) Block 20 Development			3-4Q

Exhibit R-2a, RDT&E Project Justification

DATE
May 2009

BUDGET ACTIVITY 05 System Development and Demonstration (SDD)					PE NUMBER AND TITLE 0604421F Counterspace Systems			PROJECT NUMBER AND TITLE A003 Rapid Identification Detection and Reporting System (RAIDRS)		
Cost (\$ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
A003 Rapid Identification Detection and Reporting System (RAIDRS)	33.692	37.464	25.816	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		

RAIDRS Block 20 content and funding were transferred to PE0305614F, JSpOC Mission Systems effective in FY 2010

(U) A. Mission Description and Budget Item Justification

This effort supports mission area architecture development, concept exploration, and engineering and manufacturing development to provide attack detection, threat identification and characterization, and support rapid mission impact assessments of U.S. space systems. This effort will investigate and implement the technical architecture, operational concept, support concept, training, verification (test), and deployment of a Rapid Attack Identification Detection and Reporting System (RAIDRS). Incremental capability deliveries are planned.

This program is in Budget Activity 5, System Development and Demonstration, because it supports the engineering and manufacturing development of counterspace and space control systems.

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

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) Continue system development of Rapid Attack Identification Detection and Reporting System (RAIDRS) Block 10	18.369	20.037	19.149
(U) Continue concept definition, pre-acquisition architecture development and system development of Rapid Attack Identification Detection and Reporting System (RAIDRS) Block 20	10.632	8.527	0.000
(U) RAIDRS Block 10 Test Support	0.030	0.111	0.100
(U) Architecture Development & Systems Engineering	1.024	4.001	3.175
(U) Program Office and other Technical Support, to include technical support, studies, systems engineering and integration	3.637	4.788	3.392
(U) Total Cost	33.692	37.464	25.816

(U) C. Other Program Funding Summary (\$ in Millions)

	<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>FY 2014</u>	<u>FY 2015</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) OPAF (PE 0604421F), Counterspace Systems	22.356	20.252	25.793						Continuing	TBD

(U) D. Acquisition Strategy

All contracts funded in this program element will be awarded using competitive procedures to the maximum extent possible. System will be designed and acquired in Block increments using a Block Acquisition strategy.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis

DATE

May 2009

BUDGET ACTIVITY				PE NUMBER AND TITLE					PROJECT NUMBER AND TITLE			
05 System Development and Demonstration (SDD)				0604421F Counterspace Systems					A003 Rapid Identification Detection and Reporting System (RAIDRS)			
(U) Cost Categories (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	Contract Method & Type	Performing Activity & Location	Total Prior to FY 2008 Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost to Complete	Total Cost	Target Value of Contract
(U) <u>Product Development</u>												
Architecture Development & Systems Engineering	Various	Various	6.339	1.024	Nov-07	4.001	Nov-08	3.175	Nov-09	Continuing	TBD	TBD
RAIDRS Block 10 System Development	CPAF	Integral Systems Inc, Lanham, MD	55.449	18.369	Oct-07	20.037	Oct-08	19.149	Oct-09	Continuing	TBD	TBD
RAIDRS Block 20 Requirements Development/Risk Reduction	Various	Various	1.128	10.632	Aug-08	8.527	Nov-08	0.000		Continuing	TBD	TBD
Subtotal Product Development			62.916	30.025		32.565		22.324		Continuing	TBD	TBD
Remarks:												
(U) <u>Support</u>												
Program Office Support for RAIDRS	Various	SMC, El Segundo	8.821	3.637	Oct-07	4.788	Oct-08	3.392	Oct-09	Continuing	TBD	TBD
Subtotal Support			8.821	3.637		4.788		3.392		Continuing	TBD	TBD
Remarks:												
(U) <u>Test & Evaluation</u>												
RAIDRS Block 10 Test Support	Various	Various	0.000	0.030	Jan-08	0.111	Apr-08	0.100	Oct-09	Continuing	TBD	TBD
Subtotal Test & Evaluation			0.000	0.030		0.111		0.100		Continuing	TBD	TBD
Remarks:												
(U) <u>Management</u>												
Subtotal Management			0.000	0.000		0.000		0.000		Continuing	TBD	TBD
Remarks:												
(U) Total Cost			71.737	33.692		37.464		25.816		Continuing	TBD	TBD

Exhibit R-4a, RDT&E Schedule Detail	DATE May 2009
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BUDGET ACTIVITY 05 System Development and Demonstration (SDD)	PE NUMBER AND TITLE 0604421F Counterspace Systems	PROJECT NUMBER AND TITLE A003 Rapid Identification Detection and Reporting System (RAIDRS)
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	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) <u>Schedule Profile</u>			
(U) RAIDRS Block 10 Initial Delivery			3Q
(U) RAIDRS Block 10 Initial Operational Capability			3Q

Exhibit R-2a, RDT&E Project Justification

DATE
May 2009

BUDGET ACTIVITY 05 System Development and Demonstration (SDD)							PE NUMBER AND TITLE 0604421F Counterspace Systems		PROJECT NUMBER AND TITLE A005 Counterspace C2	
Cost (\$ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
A005 Counterspace C2	10.073	9.021	7.323	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		

(U) A. Mission Description and Budget Item Justification

This effort supports the development of command and control and mission planning capabilities in support of the fielding and employment of Counterspace Systems. It provides for the integration and development of collaborative tools to link deployable counterspace systems with Joint Warfighting C2 systems and to enable integrated planning and execution of the counterspace mission. Developed capabilities will be integrated into current and future command and control systems. This program will also leverage the Joint Execution and Tasking System for Space (JETSS) efforts in support of space control and the counterspace mission areas.

This program is in Budget Activity 5, System Development and Demonstration, because it supports the engineering and manufacturing development of counterspace and space control systems.

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

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) Model, conduct "virtual testing," and analyze architectural options for the Rapid Attack Identification Detection and Reporting System (RAIDRS) and for the Counter Satellite Communications System (CCS) Command and Control (C2) and operational data flows.	3.720	1.600	0.000
(U) Continue development of Counterspace mission planning and command and control capability (JETSS)	4.392	5.561	5.358
(U) Counterspace C2 Architecture Development	0.817	0.924	0.954
(U) Program Office and other Technical Support, to include technical support, studies, systems engineering and integration	1.144	0.936	1.011
(U) Total Cost	10.073	9.021	7.323

(U) C. Other Program Funding Summary (\$ in Millions)

	<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>FY 2014</u>	<u>FY 2015</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) None										

(U) D. Acquisition Strategy

All contracts will be awarded using competitive procedures to the maximum extent possible to acquire next generation capabilities through incremental acquisitions.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis

DATE

May 2009

BUDGET ACTIVITY				PE NUMBER AND TITLE					PROJECT NUMBER AND TITLE			
05 System Development and Demonstration (SDD)				0604421F Counterspace Systems					A005 Counterspace C2			
(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 2008 Cost</u>	<u>FY 2008 Cost</u>	<u>FY 2008 Award Date</u>	<u>FY 2009 Cost</u>	<u>FY 2009 Award Date</u>	<u>FY 2010 Cost</u>	<u>FY 2010 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
(U) <u>Product Development</u> C2 Modeling, "virtual test," and analysis	MIPR	Davidson Technology, Huntsville, AL	13.148	3.720	Mar-08	1.600	Jan-09	0.000		Continuing	TBD	TBD
Develop Counterspace Planning and C2 System (JETSS)	CPAF	General Dynamics, Santa Clara, CA	4.307	4.392	Dec-07	5.561	Jan-09	5.358	Jan-10	Continuing	TBD	TBD
Subtotal Product Development			17.455	8.112		7.161		5.358		Continuing	TBD	TBD
Remarks:												
(U) <u>Support</u> Counterspace Architecture Development	CPFF	Northrup Grumman Mission Systems, Redondo Beach, CA	1.506	0.817	Dec-07	0.924	Dec-08	0.954	Dec-09	Continuing	TBD	TBD
Subtotal Support			1.506	0.817		0.924		0.954		Continuing	TBD	TBD
Remarks:												
(U) <u>Test & Evaluation</u>										Continuing	TBD	TBD
Subtotal Test & Evaluation			0.000	0.000		0.000		0.000		Continuing	TBD	TBD
Remarks:												
(U) <u>Management</u> Program Office and Other Technical Support	Various	SMC, El Segundo, CA	1.137	1.144	Nov-07	0.936	Oct-08	1.011	Oct-09	Continuing	TBD	TBD
Subtotal Management			1.137	1.144		0.936		1.011		Continuing	TBD	TBD
Remarks:												
(U) Total Cost			20.098	10.073		9.021		7.323		Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile

DATE

May 2009

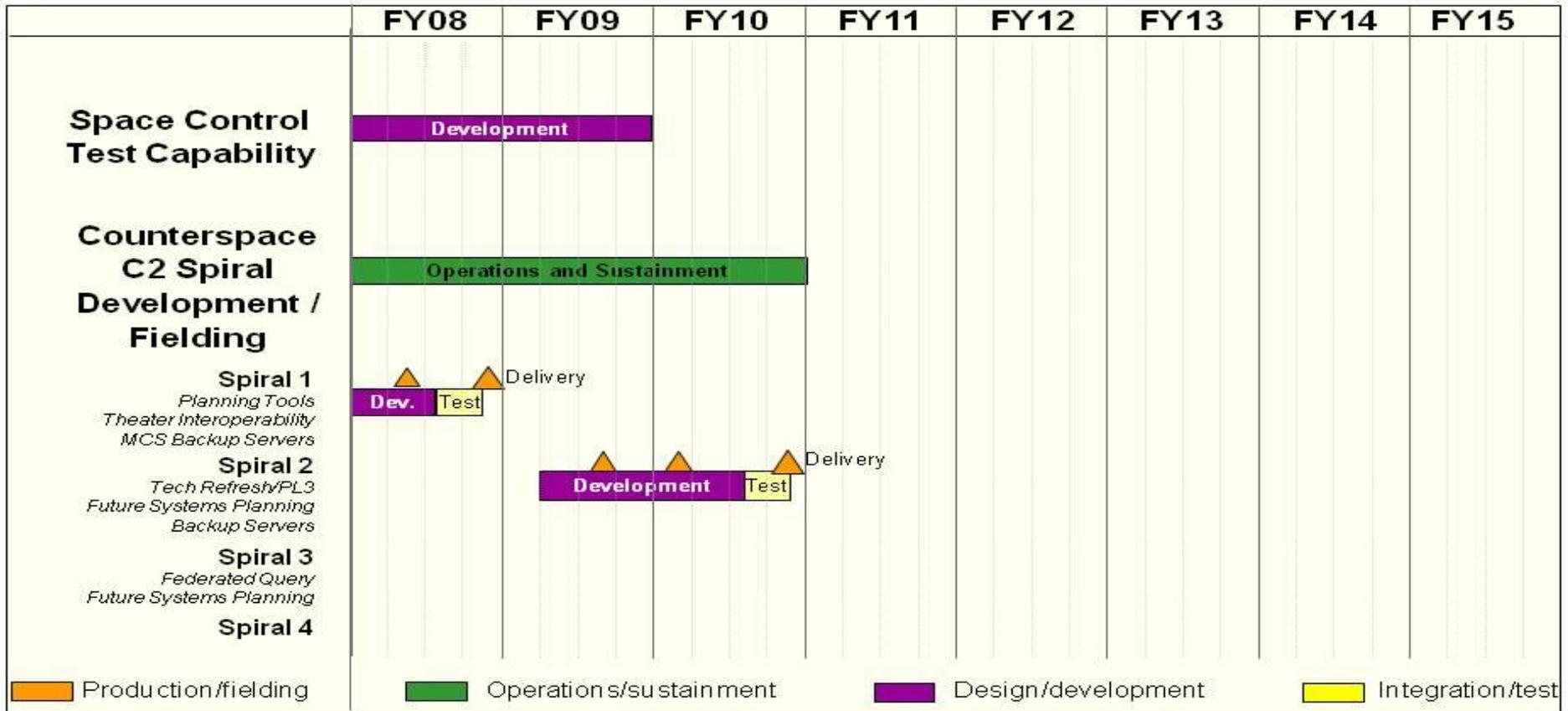
BUDGET ACTIVITY
05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604421F Counterspace Systems

PROJECT NUMBER AND TITLE
A005 Counterspace C2



Counterspace C2 Schedule



FY10 OSD/OMB Budget Hearing

Exhibit R-4a, RDT&E Schedule Detail

DATE

May 2009

BUDGET ACTIVITY

05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE

0604421F Counterspace Systems

PROJECT NUMBER AND TITLE

A005 Counterspace C2

(U) Schedule Profile

FY 2008

FY 2009

FY 2010

(U) Modeling, "virtual test," analysis

1Q

2-4Q

(U) Develop/test JETTS Spiral

1-4Q

1-4Q

1-4Q

(U) C2 Spiral Delivery

4Q

4Q