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Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Air Force **Date:** May 2017

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 1206421F / <i>Counterspace Systems</i>
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COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
Total Program Element	-	24.134	34.819	66.370	0.000	66.370	0.000	24.946	19.218	19.527	Continuing	Continuing
65A001: <i>Counter Satellite Communications System</i>	-	14.615	28.862	57.432	0.000	57.432	0.000	15.891	9.920	10.095	0.000	136.815
65A005: <i>Offensive Counterspace (OCS) C2</i>	-	7.737	3.961	7.052	0.000	7.052	0.000	7.134	7.337	7.432	Continuing	Continuing
65A013: <i>BOUNTY HUNTER</i>	-	1.782	1.996	1.886	0.000	1.886	0.000	1.921	1.961	2.000	Continuing	Continuing

Note

In FY2018, PE 0604421F, Counterspace Systems efforts were transferred to PE 1206421F, Counterspace Systems due to the creation of a new Major Force Program for Space. FY2016 and FY2017 funding is now documented in the exhibits for PE 1206421F.

A. Mission Description and Budget Item Justification

This program conducts critical planning, technology and capability insertion, and system acquisition of Air Force space control systems and associated command and control systems to meet current and future military space control needs in the face of an emerging threat. This funding supports the acquisition process including concept development, risk reduction, design, integration, test, 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) includes command and control and mission planning capabilities required for the fielding and employment of counterspace systems. Funds allow the program to continue spiral upgrades of critical battle management command and control (BMC2) functions in concert with the incremental updates to the counterspace systems it supports.

Bounty Hunter supports the Defensive Space Control of US systems in a specific Area of Responsibility and provides the capacity to prevent effective adversary use of Command, Control, Communications, Computers, and Intelligence (C4I).

This program is in Budget Activity 5, System Development and Demonstration, because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

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Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
3600: Research, Development, Test & Evaluation, Air Force I BA 5: System Development & Demonstration (SDD)		PE 1206421F I Counterspace Systems			
B. Program Change Summary (\$ in Millions)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Previous President's Budget	24.134	34.819	40.762	0.000	40.762
Current President's Budget	24.134	34.819	66.370	0.000	66.370
Total Adjustments	0.000	0.000	25.608	0.000	25.608
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	25.608	0.000	25.608
Change Summary Explanation					
FY 2018 increase due to higher Air Force prioritization to meet critical mission need. Accelerates CCS Block 20 CCD capabilities, supports delivery of CCS B10.3 development for Active Duty and Air National Guard, supports transition to a Forward Garrison CONOPs, and supports CCS mission specific emulators and integration of emulators into existing test and training ranges.					

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Air Force										Date: May 2017		
Appropriation/Budget Activity 3600 / 5					R-1 Program Element (Number/Name) PE 1206421F / Counterspace Systems				Project (Number/Name) 65A001 / Counter Satellite Communications System			
COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
65A001: Counter Satellite Communications System	-	14.615	28.862	57.432	0.000	57.432	0.000	15.891	9.920	10.095	0.000	136.815
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
Acquisition Decision Memorandum (24 April 2009) directed all capabilities identified in the October 2006 CCS Block 20, Joint Requirements Oversight Council (JROC) approved Capability Development Document (CDD) shall be accomplished as a Pre-planned Product Improvement Program (P3I) upgrades to the Counter Communications System (CCS) Block 10.												
CCS provides expeditionary, deployable, reversible offensive space control (OCS) effects applicable across the full spectrum of conflict. It prevents adversary Satellite Communications (SATCOM) in Area of Responsibility (AOR) including Command & Control (C2), Early Warning and Propaganda, and hosts Rapid Reaction Capabilities in response to Urgent Needs. This program effort includes architecture engineering and studies, system hardware design and development, software design and integration, and testing and demonstration of capabilities to provide disruption of satellite communications signals.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2016	FY 2017	FY 2018	
Title: Counter Communications System (CCS) Pre-planned Product Improvement (P3I) Program									14.615	28.862	57.432	
Description: Develop, integrate, test and field the CCS P3I program. This is an incremental approach to deliver Block 20 CCS capabilities.												
FY 2016 Accomplishments: Continued development, integration and testing of Increment 2 of Block 10 P3I program (CCS B10.2).												
FY 2017 Plans: Continue development, integration and testing of Increment 2 of Block 10 P3I program (CCS B10.2). Planned delivery of one system with a Development Support Facility. Begin development of Increment 3 of Block 10 P3I program (CCS B10.3).												
FY 2018 Plans: Continue development, integration and testing of Increment 3 of Block 10 P3I program (CCS B10.3). Include additional CCS B20 CDD capabilities in CCS B 10.3, design Forward Garrison systems, and mission specific emulators. Continue program office and other related support activities that may include, but are not limited to studies, technical analysis, etc.												
Accomplishments/Planned Programs Subtotals									14.615	28.862	57.432	

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Air Force			Date: May 2017
Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 1206421F / Counterspace Systems	Project (Number/Name) 65A001 / Counter Satellite Communications System	

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

Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• SPAF:BA01:Line Item CTRSPC: Counterspace Systems	43.065	46.884	28.798	0.000	28.798	1.130	0.000	0.000	0.000	0.000	99.916

Remarks

D. Acquisition Strategy

All contracts 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.

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.

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Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Air Force												Date: May 2017			
Appropriation/Budget Activity 3600 / 5						R-1 Program Element (Number/Name) PE 1206421F / Counterspace Systems				Project (Number/Name) 65A001 / Counter Satellite Communications System					
Product Development (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Block 10 P3I Development	Various	Various : El Segundo, CA	-	8.581	May 2016	22.070	May 2017	50.109	May 2018	0.000		50.109	Continuing	Continuing	-
Technical Mission Analysis	RO	Aerospace Corp : El Segundo, CA	-	0.955	Oct 2015	0.568	Oct 2016	0.578	Oct 2017	0.000		0.578	Continuing	Continuing	11.144
Enterprise Systems Engineering and Integration	C/FFP	AT&T : El Segundo, CA	-	0.378	Apr 2016	0.519	Apr 2017	0.528	Apr 2018	0.000		0.528	Continuing	Continuing	-
Subtotal			-	9.914		23.157		51.215		0.000		51.215	-	-	-
Support (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Security	C/CPAF	Mantech : El Segundo, CA	-	2.062	Nov 2015	2.100	Nov 2016	2.138	Nov 2017	0.000		2.138	0.000	6.300	-
Miscellaneous Support Services	Various	Various : TBD	-	0.008	May 2016	0.007	Nov 2016	0.007	Nov 2017	0.000		0.007	Continuing	Continuing	-
Subtotal			-	2.070		2.107		2.145		0.000		2.145	-	-	-
Test and Evaluation (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-		-	-	-	-
Management Services (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
FFRDC	RO	Aerospace Corp : El Segundo, CA	-	0.175	Oct 2015	0.719	Oct 2016	0.732	Oct 2016	0.000		0.732	Continuing	Continuing	-

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Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Air Force												Date: May 2017			
Appropriation/Budget Activity 3600 / 5						R-1 Program Element (Number/Name) PE 1206421F / Counterspace Systems				Project (Number/Name) 65A001 / Counter Satellite Communications System					

Management Services (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost		Cost To Complete	Total Cost	Target Value of Contract
A&AS	Various	Various : El Segundo, CA	-	2.351	Nov 2015	2.767	Apr 2017	3.225	May 2018	0.000		3.225		Continuing	Continuing	-
Other Support	Various	Various : El Segundo, CA	-	0.105	Oct 2015	0.112	Oct 2016	0.115	Oct 2017	0.000		0.115		Continuing	Continuing	-
Subtotal			-	2.631		3.598		4.072		0.000		4.072		-	-	-

	Prior Years	FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total		Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		-	14.615		28.862		57.432		0.000		57.432	-	-	-

Remarks

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Exhibit R-4, RDT&E Schedule Profile: FY 2018 Air Force			Date: May 2017		
Appropriation/Budget Activity 3600 / 5			R-1 Program Element (Number/Name) PE 1206421F / <i>Counterspace Systems</i>		
			Project (Number/Name) 65A001 / <i>Counter Satellite Communications System</i>		

	FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
10.2 System Verification Test (SVT)				■																								
10.2 System Verification Review (SVR)					■																							
10.2 Development Test/Operational Test (DT/OT)							■																					
10.2 System Delivery: #1-2						■																						
10.2 System Deliveries : #3-16																												
10.3 Authority To Proceed (ATP)																												
10.3 System Deliveries # 1-4																												

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Exhibit R-4A, RDT&E Schedule Details: FY 2018 Air Force			Date: May 2017
Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 1206421F / <i>Counterspace Systems</i>	Project (Number/Name) 65A001 / <i>Counter Satellite Communications System</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
10.2 System Verification Test (SVT)	4	2016	4	2016
10.2 System Verification Review (SVR)	1	2017	1	2017
10.2 Development Test/Operational Test (DT/OT)	2	2017	2	2017
10.2 System Delivery: #1-2	2	2017	2	2017
10.2 System Deliveries : #3-16	3	2018	1	2020
10.3 Authority To Proceed (ATP)	3	2018	3	2018
10.3 System Deliveries # 1-4	3	2020	3	2020

Note

For CCS B10.2, 14 systems delivered plus 2 trainers.

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Air Force										Date: May 2017		
Appropriation/Budget Activity 3600 / 5					R-1 Program Element (Number/Name) PE 1206421F / Counterspace Systems				Project (Number/Name) 65A005 / Offensive Counterspace (OCS) C2			
COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
65A005: Offensive Counterspace (OCS) C2	-	7.737	3.961	7.052	0.000	7.052	0.000	7.134	7.337	7.432	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
This effort supports the evolution of command and control (C2) and mission planning capabilities in support of the fielding and employment of Counterspace Systems. It provides for the integration and upgrade of collaborative tools to link deployable counterspace systems with Joint Warfighting C2 systems and to enable integrated planning and execution of the counterspace mission. Upgraded capabilities will be integrated into current and future command and control systems. This program will leverage the Joint Execution and Tasking System for Space (JETSS) effort in C2 for future space control and counterspace mission capabilities. Requirements for this program are derived from AFSPC prioritized AF IMT 1067 IAW AFSPCI 63-104.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2016	FY 2017	FY 2018	
Title: Joint Execution and Tasking System for Space (JETSS)									7.737	3.961	7.052	
Description: Evolve with upgrades the counterspace mission planning and C2 capability to support counterspace systems space control warfighter activities.												
FY 2016 Accomplishments: Completed Spiral 4 development, test and delivery which included mandated Windows 7 migration. Continued Spiral 5 development and incremental delivery of Deconfliction Product Generation and Historical Data Intel analysis tool.												
FY 2017 Plans: Continue Spiral 5 development, test and incremental delivery including Voice Chat record, Electronic Preparation of the Battlespace application, increase machine to machine document sharing, and increase C2 Integrated Space Picture Capability.												
FY 2018 Plans: Continue Spiral 5 development. Begin upgrades to the JETSS Graphic User Interface (GUI), develop a more robust security architecture to support multiple security classification levels. Continue program office and other related support activities that may include, but are not limited to studies, technical analysis, etc.												
Accomplishments/Planned Programs Subtotals									7.737	3.961	7.052	
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost	
• None: N/A	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	-	

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Air Force			Date: May 2017
Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 1206421F / <i>Counterspace Systems</i>	Project (Number/Name) 65A005 / <i>Offensive Counterspace (OCS) C2</i>	

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

<u>Line Item</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u> <u>Base</u>	<u>FY 2018</u> <u>OCO</u>	<u>FY 2018</u> <u>Total</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
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Remarks

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D. Acquisition Strategy

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

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.

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Air Force										Date: May 2017		
Appropriation/Budget Activity 3600 / 5					R-1 Program Element (Number/Name) PE 1206421F / Counterspace Systems				Project (Number/Name) 65A013 / BOUNTY HUNTER			
COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
65A013: BOUNTY HUNTER	-	1.782	1.996	1.886	0.000	1.886	0.000	1.921	1.961	2.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Bounty Hunter (BH) supports the Defensive Space Control of US systems in a specific AOR and provides the capacity to prevent effective adversary use of Command, Control, Communications, Computers, and Intelligence (C4I). Continuing yearly spiral development is needed to meet new user needs in an ever changing threat environment.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2016	FY 2017	FY 2018
Title: Bounty Hunter	1.782	1.996	1.886
Description: Develop new capabilities for the Bounty Hunter program to maintain operational capability. Specific accomplishments are classified.			
FY 2016 Accomplishments: Developed Spiral 1 upgrades based on verified warfighter needs (which are classified).			
FY 2017 Plans: Develop and deliver Spiral 2 upgrades based on verified warfighter need (which are classified)			
FY 2018 Plans: Develop and deliver Spiral 3 upgrades based on verified warfighter need (which are classified)			
Accomplishments/Planned Programs Subtotals			1.886

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

Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• CTRSPC / Counterspace Systems: <i>Bounty Hunter Investment</i>	0.000	0.000	6.061	0.000	6.061	1.130	0.000	0.000	0.000	0.00	0.000
Remarks											

D. Acquisition Strategy

Contracts funded for this program shall be awarded to the MITRE Federally Funded Research and Development Center (FFRDC).

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E. Performance Metrics

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