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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Air Force **Date:** February 2020

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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	-	19.637	27.037	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
65A001: <i>Counter Satellite Communications System</i>	-	13.962	19.808	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
65A005: <i>Offensive Counterspace (OCS) C2</i>	-	3.824	5.282	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
65A013: <i>BOUNTY HUNTER</i>	-	1.851	1.947	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

In FY 2021, PE 1206421F, Counterspace Systems efforts were transferred to Appropriation 3620, Research, Development, Test & Evaluation, Space Force, PE 1206421SF Counterspace Systems from Appropriation 3600, Budget Activity 05 due to the creation of a new Appropriation for Space Force.

Acquisition Decision Memorandum (ADM) April 24th 2009, directed all capabilities identified in the October 4th 2006, Counter Communications System (CCS) Block 20, Joint Requirements Oversight Council (JROC) approved Capability Development Document (CDD) shall be accomplished as Pre-planned Product Improvement Program (P3I) upgrades to the CCS Block 10. On April 11th 2016, Air Force Space Command (AFSPC) updated ADM adding additional responsibility for CCS Block 10.3 Meadowlands.

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.

Space Acquisition must respond with speed and agility to emerging adversary threats. Space & Missile Systems Center (SMC) is transforming the organization and implementation of space acquisition to an enterprise approach, maximizing innovation and resiliency, leveraging international, commercial, and mission partnerships, and managing program/project priorities according to an integrated unclassified/classified enterprise space architecture. Expanding the appropriate acquisition authorities and contract mechanisms to deliver capability sooner, SMC will strategically execute experimentation, prototyping, risk reduction, and other efforts to develop new or repurpose capabilities.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver Counterspace weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 1206392F and 1206398F.

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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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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 annual agile development is needed to meet new user needs in an ever changing threat environment.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver Bounty Hunter weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605831F.

This program is in Budget Activity 5, System Development and Demonstration (SDD) 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.

B. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	20.242	29.037	27.588	0.000	27.588
Current President's Budget	19.637	27.037	0.000	0.000	0.000
Total Adjustments	-0.605	-2.000	-27.588	0.000	-27.588
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	-2.000			
• 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	-0.605	0.000			
• Other Adjustments	0.000	0.000	-27.588	0.000	-27.588

Change Summary Explanation

FY 2020: \$2.000M reduction to account for the availability of prior year execution balances.
 FY 2021: -\$54.689M; funds starting in FY 2021 were transferred from RDT&E, Air Force to RDT&E, Space Force (\$27.037M increase for CCS).

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Air Force										Date: February 2020		
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>			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
65A001: <i>Counter Satellite Communications System</i>	-	13.962	19.808	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

In FY 2021, PE 1206421F, Counter Satellite Communications System efforts were transferred to Appropriation 3620, Research, Development, Test & Evaluation, Space Force, PE 1206421SF Counter Satellite Communications System from Appropriation 3600, Budget Activity [05] due to the creation of a new Appropriation for Space Force.

Acquisition Decision Memorandum (ADM) April 24th 2009, directed all capabilities identified in the Oct 4th 2006 CCS Block 20, Joint Requirements Oversight Council (JROC) approved Capability Development Document (CDD) shall be accomplished as Pre-planned Product Improvement Program (P3I) upgrades to the Counter Communications System (CCS) Block 10. On April 11th 2016, Air Force Space Command (AFSPC) A5/A8/A9 signed and updated ADM adding additional responsibility for CCS Block 10.3 Meadowlands.

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.

JETSS is the Counterspace Command and Control (C2) system for mission planning and execution monitoring currently in use at the Combined Space operations Center (CSpOC) Special Technical Operations (STO) Cell.

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

	FY 2019	FY 2020	FY 2021
Title: Counter Communications System (CCS) Pre-planned Product Improvement (P3I) Program	13.962	19.808	0.000
Description: Develop, integrate, test and field the CCS P3I program. This is an incremental approach to deliver Block 20 CCS capabilities.			
FY 2020 Plans: Continue P3I development, integration and testing of CCS Block 10.3 Meadowlands. Include additional CCS Block 20 CDD capabilities in CCS Block 10.3 Meadowlands, design forward garrison systems, mission techniques, mission specific emulators, and multi-range integration. Rapidly respond and implement system resiliency and situational awareness necessary to operate in the contested space domain. RDT&E funding is required to support this transformation and enable Space Superiority end-to-end			

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Air Force		Date: February 2020
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>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021
integration activities such as, but not limited to, program office support, studies, technical analysis, experimentation, prototyping, architectural development, systems engineering, demonstrations, testing, command and control integration, mission partner integration, and space test/combat range events.			
FY 2021 Plans: N/A			
FY 2020 to FY 2021 Increase/Decrease Statement: N/A			
Accomplishments/Planned Programs Subtotals	13.962	19.808	0.000

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u> <u>Base</u>	<u>FY 2021</u> <u>OCO</u>	<u>FY 2021</u> <u>Total</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• SPAF 01 1206421F: <i>Counterspace Systems</i>	1.121	5.700	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.821

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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Air Force												Date: February 2020			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
3600 / 5				PE 1206421F / Counterspace Systems				65A001 / Counter Satellite Communications System							
Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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	-	6.892	Feb 2019	12.632	Feb 2020	-		-		-	Continuing	Continuing	-
Technical Mission Analysis	RO	Aerospace Corp : El Segundo, CA	-	1.095	Oct 2018	0.724	Oct 2019	-		-		-	Continuing	Continuing	11.144
Enterprise Systems Engineering and Integration	C/FFP	AT&T : El Segundo, CA	-	0.368	May 2019	0.199	May 2020	-		-		-	Continuing	Continuing	-
Counterspace Architecture Development	C/CPFF	NGMS : Redondo Beach, CA	-	-		-		-		-		-	Continuing	Continuing	-
Subtotal			-	8.355		13.555		-		-		-	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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	-	2.177	Nov 2018	2.215	Nov 2019	-		-		-	Continuing	Continuing	-
Miscellaneous Support Services	Various	Various : TBD	-	0.007	Nov 2018	0.008	Nov 2019	-		-		-	Continuing	Continuing	-
Subtotal			-	2.184		2.223		-		-		-	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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
Testing Support	MIPR	25 Space Range Squadron : Peterson AFB, CO	-	0.116	Oct 2018	-		-		-		-	0.000	0.116	-
Subtotal			-	0.116		-		-		-		-	0.000	0.116	N/A

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Air Force		Date: February 2020
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 by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
CCS B10.3				
10.2 System Deliveries : #3-16	1	2019	4	2020
10.3 Authority To Proceed (ATP)	2	2019	2	2019
10.3. Development	2	2019	4	2020

Note

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

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Air Force **Date:** February 2020

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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
65A005: <i>Offensive Counterspace (OCS) C2</i>	-	3.824	5.282	0.000	0.000	0.000	0.000	0.000	0.000	0.000	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 requirements, in accordance with AFSPC 63-104.

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

	FY 2019	FY 2020	FY 2021
Title: Joint Execution and Tasking System for Space (JETSS)	3.824	5.282	-
Description: Evolve with upgrades the counterspace mission planning and C2 capability to support counterspace systems space control warfighter activities.			
FY 2020 Plans: Continue Spiral 6 development of higher protection level to support multiple classification levels and risk reduction efforts to support C2 initiatives for various programs.			
Rapidly respond to implement system resiliency and situational awareness necessary to operate in the contested space domain. activities may include, but are not limited to, program office support, studies, technical analysis, prototyping, etc.			
FY 2020 to FY 2021 Increase/Decrease Statement: N/A			
Accomplishments/Planned Programs Subtotals	3.824	5.282	-

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

N/A

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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 Air Force		Date: February 2020
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>

	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025			
	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

JETSS																												
C2 Spiral #6 Development	██████████																											
C2 Spiral #6 Test																												
C2 Spiral #6 Delivery																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Air Force		Date: February 2020
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>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
JETSS				
C2 Spiral #6 Development	1	2019	1	2020
C2 Spiral #6 Test	4	2019	4	2019
C2 Spiral #6 Delivery	1	2020	1	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Air Force **Date:** February 2020

Appropriation/Budget Activity 3600 / 5					R-1 Program Element (Number/Name) PE 1206421F / <i>Counterspace Systems</i>				Project (Number/Name) 65A013 / <i>BOUNTY HUNTER</i>			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
65A013: <i>BOUNTY HUNTER</i>	-	1.851	1.947	0.000	0.000	0.000	0.000	0.000	0.000	0.000	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 annual agile development is needed to meet new user needs in an ever changing threat environment.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver Bounty Hunter weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605831F.

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

	FY 2019	FY 2020	FY 2021
Title: Bounty Hunter	1.851	1.947	0.000
Description: Develop new capabilities for the Bounty Hunter program to maintain operational capability. Specific accomplishments are classified.			
FY 2020 Plans: Complete development and integration of UHF capability. Resolve any new tech obsolescence HW and SW challenges with new system component purchases for additional new system delivery to a new AOR. Prepare R&D plan for new total system upgrade to BH 3.0 to allow for system component consolidation and consideration for remote operation. Rapidly respond to reach and maintain pace with the threat environment and implement system resiliency and situational awareness necessary to operate in the contested space domain. Begin transition of some R&D activities from MITRE to a commercial vendor. Activities may include, but are not limited to program office support, studies, technical analysis, experimentation, prototyping, etc.			
FY 2021 Plans: N/A			
FY 2020 to FY 2021 Increase/Decrease Statement: N/A			
Accomplishments/Planned Programs Subtotals	1.851	1.947	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Air Force	Date: February 2020
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Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 1206421F / <i>Counterspace Systems</i>	Project (Number/Name) 65A013 / <i>BOUNTY HUNTER</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u> <u>Base</u>	<u>FY 2021</u> <u>OCO</u>	<u>FY 2021</u> <u>Total</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• SPAF 01 CTRSPC: <i>Counterspace Systems</i>	1.121	-	-	-	-	-	-	-	-	0.000	1.121

Remarks

BH was established as a new start in FY16 as a JCTD project in response to a JUON in 2010. BH was established as a Program of Record (PoR) in March 2019.

D. Acquisition Strategy

Contracts funded for this program shall be awarded to MITRE, a Federally Funded Research and Development Center (FFRDC). The establishment of a commercial vendor has yet to be determined.

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 Air Force **Date:** February 2020

Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 1206421F / <i>Counterspace Systems</i>	Project (Number/Name) 65A013 / <i>BOUNTY HUNTER</i>
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	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025			
	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
<i>BOUNTY HUNTER</i>																												
Bounty Hunter Agile Development 2019																												
2019 Continuous Delivery																												
Bounty Hunter Agile Development 2020																												
2020 Continuous Delivery																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Air Force **Date:** February 2020

Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 1206421F / <i>Counterspace Systems</i>	Project (Number/Name) 65A013 / <i>BOUNTY HUNTER</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>BOUNTY HUNTER</i>				
Bounty Hunter Agile Development 2019	1	2019	4	2019
2019 Continuous Delivery	2	2019	1	2020
Bounty Hunter Agile Development 2020	1	2020	4	2020
2020 Continuous Delivery	2	2020	1	2021