Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Air Force											Date: February 2018	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*						**R-1 Program Element (Number/Name)** PE 0306250F *I Cyber Operations Technology Development*						
COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
Total Program Element	-	205.048	322.187	253.825	0.000	253.825	248.661	237.211	232.660	236.630	Continuing	Continuing
646008: *US Cyber Command Technology Development*	-	205.048	322.187	253.825	0.000	253.825	248.661	237.211	232.660	236.630	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

In FY2019, elements of PE 0306250F, Cyber Operations Technology Development, Project Joint Common Services efforts were transferred to PE 0208097F, Joint Cyber Command and Control, in order to increase clarity and delineation from other activities.

In FY2019, elements of PE 0306250F, Cyber Operations Technology Development, Project Joint Common Services efforts were transferred to PE 0208099F, Unified Platform, in order to increase clarity and delineation from other activities.

A. Mission Description and Budget Item Justification

US Cyber Command's (USCYBERCOM) mission is to deter or defeat strategic threats to US interests and infrastructure, provide mission assurance for the operations and defense of the Department of Defense information environment, and support the achievement of Joint Force Commander objectives.

USCYBERCOM in conjunction with the Services and Defense Agencies will develop and expand infrastructure architectures and cyber tools and capabilities to support Cyber Mission Forces (CMF) to "fight tonight" with lethality, resiliency, and innovative deterrence against key threats in the strategic environment. Focus is on four broad program areas: Joint Common Services, Joint Access Platforms, Joint Tools, and Joint Analytics.

The specific details and aspects of these cyber activities are classified and will be provided on a need-to-know basis. Please contact USCYBERCOM, 443-634-7725.

This program is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P) because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Air Force				Date: February 2018	

Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force I BA 4: Advanced Component Development & Prototypes (ACD&P)*	R-1 Program Element (Number/Name) PE 0306250F *I Cyber Operations Technology Development*

B. Program Change Summary ($ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Previous President's Budget	162.644	322.187	203.833	0.000	203.833
Current President's Budget	205.048	322.187	253.825	0.000	253.825
Total Adjustments	42.404	0.000	49.992	0.000	49.992
• 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	48.000	0.000			
• SBIR/STTR Transfer	-5.596	0.000			
• Other Adjustments	0.000	0.000	49.992	0.000	49.992

Change Summary Explanation

In FY2017, PE 0306250F, Cyber Operations Technology Development, Project Joint Tools, was increased by $48.0M to address Missile Defeat and Defense Enhancement efforts. Additional details are classified.

In FY2019, PE 0306250F, Cyber Operations Technology Development, Project Joint Tools, was increased by $49.992M to address Missile Defeat and Defense Enhancement efforts. Additional details are classified.

C. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Title: Combatant Command Support	79.108	0.000	0.000
Description: Supports the development and testing of various cyber tools critical to achieving Combatant Command mission requirements and military objectives. Activities include research, studies, integration, analysis, access development, and operational assessment of cyberspace capabilities, methodologies, and tactics in support of Combatant Command objectives and requirements. Further details are held at higher classification levels. *FY 2018 Plans:* N/A *FY 2019 Plans:* N/A *FY 2018 to FY 2019 Increase/Decrease Statement:*			

Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Air Force	Date: February 2018
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0306250F *I Cyber Operations Technology Development*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
N/A			
Title: Defend the Nation	71.297	0.000	0.000
Description: Funding supports the prototype development of a diverse cyber capability portfolio to enable efforts to defeat a wide variety of cyber attacks. Efforts include research, integration, analysis, access development, training, testing, and assessments for defensive cyber capabilities. Further details are held at higher classification levels. **FY 2018 Plans:** N/A **FY 2019 Plans:** N/A **FY 2018 to FY 2019 Increase/Decrease Statement:** N/A			
Title: Operate and Defend the DoDIN / Cyber Situational Awareness / Unified Platform	54.643	0.000	0.000
Description: Supports engineering and development of tools, data strategy, and management of a common operating picture. Support operations focused on cyber key terrain at the global and national level and for cyber situational awareness for the Services and CCMDs. Further details are held at higher classification levels. **FY 2018 Plans:** N/A **FY 2019 Plans:** N/A **FY 2018 to FY 2019 Increase/Decrease Statement:** N/A			
Title: Joint Common Services	-	82.374	52.443
Description: Funding supports capabilities used in CMF to conduct cyber operations. The origin, details, and specific aspects of these efforts are classified and will be provided on a need-to-know basis. Please contact USCYBERCOM, 443-634-7725. **FY 2018 Plans:**			

Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0306250F *I Cyber Operations Technology Development*	

C. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Establish and evolve the Military Cyberspace Operations Platform (MCOP) to enable split-based offensive and defensive operations. Continue to advance the Unified Platform's Mission Essential Support Infrastructure (MESI) capabilities and integration of Service infrastructure to the MCOP. Fully deploy CENTROPY for an initial set of use cases. CENTROPY is a Cyber C2 system that provides oversight and management of operational readiness. Continue to support Phase 2 build-out for the Cyber Situation Awareness Evaluation of Alternatives. Continue to support delivery of the Unified Cyber Analysis Portal (UCAP) to a full operational capability (FOC) that provides a comprehensive solution for malware triage. Continue employment of USCYBERCOM cross domain solutions that enable automated data flow from access platform to data repository. Continue development of the Unclassified Amazon Web Services (AWS) GovCloud and Big Data Platform (BDP) that enables the Service CMF teams to identify anomalous behavior on the DODIN network. Continue development of technologies, policies, and processes needed to enable Intelligence and "indicator" sharing across the DODIN tiers and domains. ***FY 2019 Plans:*** Will continue the development of the MCOP as the common joint capability to enable split-based, offensive and defensive operations. Will deploy CENTROPY on three domains. Will continue to develop and expand the malware analysis capabilities of the UCAP. Will continue development of USCYBERCOM cross domain solutions that enable automated data flow from access platform to data repository.			

Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0306250F I *Cyber Operations Technology Development*	

C. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Will continue development of the Unclassified Amazon Web Services (AWS) GovCloud and Big Data Platform (BDP) that enables the Service CMF teams to identify anomalous behavior on the DODIN network. Will continue development of technologies, policies, and processes needed to enable Intelligence and "indicator" sharing across the DODIN tiers and domains. Will continue development and employment of technologies, policies, and processes needed to enable Intelligence and "indicator" sharing across the DODIN tiers and domains. OSD designated the Air Force as Executive Agent for the Unified Platform and Joint Cyber Command and Control. Will transition the Unified Platform and Joint Cyber Command and Control activities to USAF. Some aspects of the efforts are classified and will be provided on a need-to-know basis. For further information, please contact USCYBERCOM, 443-634-7725. *FY 2018 to FY 2019 Increase/Decrease Statement:* Funding decreased due the OSD designation of the US Air Force as Executive Agent for the Unified Platform (UP) and Joint Cyber Command and Control (JCC2) program. No FY19 funds are being applied to UP or JCC2 in this Program Element (PE) code.			
Title: Joint Access Platforms *Description:* Funding supports capabilities used in Cyber Mission Force (CMF) operations to access targets and retrieve data. The origin, details, and specific aspects of these efforts are classified and will be provided on a need-to-know basis. Please contact USCYBERCOM, 443-634-7725. *FY 2018 Plans:* Continue employment of the on-net operations infrastructure used to conduct Title 10 cyberspace operations. Support continued employment and deliver to reach Full Operational Capability (FOC), a system that provides a client/server platform to deliver multiple mission-based cyber effects. Continue development of operational system that delivers distributed denial of service (DDoS) capabilities on the Department of Defense Information Network (DODIN).	-	58.735	83.730

Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*		**R-1 Program Element (Number/Name)** PE 0306250F *I Cyber Operations Technology Development*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Continue extension and sustainment of the text classifier machine learning capabilities. ***FY 2019 Plans:*** Will continue development and deployment of on-net operations infrastructure. Will continue to develop improvements for client/server platforms that delivers multiple mission-based cyber effects. Will continue development of operational system that delivers DDoS capabilities on the DODIN. Some aspects of the efforts are classified and will be provided on a need-to-know basis. For further information, please contact USCYBERCOM, 443-634-7725. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Funding increased due to a planned expansion in Strategic Cyber Deterrence efforts in response to evolving targets.			
Title: Joint Tools ***Description:*** Funding supports capabilities used by the CMF to exploit targets during operations. The origin, details, and specific aspects of these efforts are classified and will be provided on a need-to-know basis. Please contact USCYBERCOM, 443-634-7725. ***FY 2018 Plans:*** Continue development of the deployed exploitation framework for USCYBERCOM. Continue the tool repository and signature management study on each spiral of delivered tools that enables tool measurement and repository as well as a means to manipulate tool code to minimize risk of discovery. Continue to develop and deliver additional foundational tools suites and continue to populate existing tool suites with the full complement of required capabilities. The foundational tool suites will provide operational agility for CMF cyberspace operations. Continue spiral development process of cyberspace operations basic tools that provide operational agility during CMF effects operations. Continue to support development and employment of the results from the signature diversity study. Support Joint Task Force ARES OCO requirements.	-	170.516	107.400

Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0306250F *I Cyber Operations Technology Development*	

C. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Continue to support a classified research and development effort in support of combatant command requirements. All aspects of this effort are classified and will be provided on a need know basis. This is a congressional special interest item. ***FY 2019 Plans:*** Will continue development of the USCYBERCOM exploitation frameworks. Will complete implementation of signature diversity capability which will have the effect of force multiplication. This capability will enable manipulation of tools code such that a single tool can look like multiple tools and provides a means to minimize risk of discovery. Will continue to develop and deliver additional foundational tools suites and continue to populate existing tool suites with the full complement of required capabilities. The foundational tool suites will provide operational agility for CMF cyberspace operations. Will continue to grow the tool repository and measure signatures on each spiral of delivered tools to verify uniqueness of tools considered to be diverse. Will continue to develop and deliver specialized tools and exploits to CMF. Tools are targeted to specific adversary targets and technologies to enable specific cyber operations. Will continue to support Joint Task Force ARES. Will continue to support a classified research and development effort in support of combatant command requirements. All aspects of this effort are classified and will be provided on a need know basis. This is a congressional special interest item. Some aspects of the efforts are classified and will be provided on a need to know basis. For further information, please contact USCYBERCOM, 443-634-7725. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Funding decreased due to reduction of effort on classified project.			
Title: Joint Analytics *Description:* Funding in Analytics supports capabilities used in CMF operations to correlate data collected from multiple sources to garner unique insight to enable decision making.	-	10.562	10.252

Exhibit R-2, **RDT&E Budget Item Justification:** PB 2019 Air Force			**Date:** February 2018		
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*			**R-1 Program Element (Number/Name)** PE 0306250F *I Cyber Operations Technology Development*		

C. Accomplishments/Planned Programs ($ in Millions)	**FY 2017**	**FY 2018**	**FY 2019**
The origin, details and specific aspects of these efforts are classified and will be provided on a need-to-know basis. Please contact USCYBERCOM, 443-634-7725. *FY 2018 Plans:* Support creation and development of Advanced Data Analytics that provide big data analysis tools and techniques, assist with developing target folders (to include target analysis, target system analysis, and network analysis), provide technical expertise on data query strategies, provide technical continuity for development efforts. *FY 2019 Plans:* Will continue development and sustainment of Advanced Data Analytics for cyber operations. Many aspects of the effort are classified and will be provided on a need-to-know basis. For further information, please contact USCYBERCOM at 443-634-7725. *FY 2018 to FY 2019 Increase/Decrease Statement:* Funding decrease due to rate adjustments.			
Accomplishments/Planned Programs Subtotals	205.048	322.187	253.825

D. Other Program Funding Summary ($ in Millions)
 N/A
Remarks

E. Acquisition Strategy
 Facilitate the delivery of technology capabilities to the Cyber Mission Forces, by applying innovative solutions for existing and emerging technologies. Contracts are awarded under full and open completion whenever possible. Variations of both Fixed Price (FP) and Cost Plus (CP) contracting vehicles will be used and managed by USCYBERCOM Acquisition authority, various Service Component contracting offices, Combatant Command Contracting offices and National Security Agency contracting offices.

F. 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 2019 Air Force		**Date:** February 2018
Appropriation/Budget Activity 3600 *I* 4	**R-1 Program Element (Number/Name)** PE 0306250F *I Cyber Operations Technology Development*	**Project (Number/Name)** 646008 *I US Cyber Command Technology Development*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Combatant Command Support	Various	Multiple Agencies : Various	-	79.108	Jul 2017	-		-		-		-	Continuing	Continuing	-
Defend the Nation	Various	Multiple Agencies : Various	-	71.297	Nov 2016	-		-		-		-	Continuing	Continuing	-
Operate and Defend the DoDIN / Cyber Situational Awareness / Unified Platform	Various	Multiple Agencies : Various	-	54.643	Nov 2016	-		-		-		-	Continuing	Continuing	-
Joint Common Services	Various	Multiple Agencies : Various	-	-		81.724	Feb 2018	51.609	Apr 2019	-		51.609	Continuing	Continuing	-
Joint Access Platforms	Various	Multiple Agencies : Various	-	-		58.085	Feb 2018	82.896	Apr 2019	-		82.896	Continuing	Continuing	-
Joint Tools	Various	Multiple Agencies : Various	-	-		169.866	Feb 2018	106.566	Apr 2019	-		106.566	Continuing	Continuing	-
Joint Analytics	Various	Multiple Agencies : Various	-	-		9.912	Feb 2018	9.418	Apr 2019	-		9.418	Continuing	Continuing	-
Subtotal			-	205.048		319.587		250.489		-		250.489	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PMA	Various	Various : Various	-	-		2.600	Feb 2018	3.336	Apr 2019	-		3.336	Continuing	Continuing	-
Subtotal			-	-		2.600		3.336		-		3.336	Continuing	Continuing	N/A

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	205.048		322.187		253.825		-		253.825	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0306250F / Cyber Operations Technology Development	Project (Number/Name) 646008 / US Cyber Command Technology Development

	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	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
Cyber Operations Technology Development																												
1. UP AoA (Joint Common Services, formerly Defend the Nation)	▓	▓	▓	▓	▓	▓	▓	▓																				
2. UP RR (Joint Common Services, formerly Defend the Nation)	▓	▓	▓	▓	▓	▓	▓	▓																				
3. Cyber C2 Pilot (Joint Common Services, formerly Defend the Nation)	▓	▓	▓	▓																								
4. Cyber C2 FOC (Joint Common Services)					▓	▓	▓	▓	▓	▓	▓	▓																
5. Cyber C2 Spiral Development (Joint Common Services)													▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓
6. Cyber SA Prototype (Joint Common Services, formerly Defend the Nation)	▓	▓	▓	▓	▓	▓	▓	▓																				
7. Data analytics platform next GEN (Joint Common Services)						▓	▓	▓	▓	▓	▓	▓	▓	▓														
8. Cyber UCAP FOC (Joint Common Services, formerly Defend the Nation)	▓	▓	▓	▓	▓	▓																						
9. Cyber UCAP Spiral Development - 1 (Joint Common Services)											▓	▓	▓	▓	▓	▓	▓											
10. Cyber UCAP Spiral Development - 2 (Joint Common Services)																											▓	▓
11. CYBERCOM access platform IOC (Joint Access Platforms, formerly Combatant Command Support and Operate and Defend the DODIN)	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓																
12. CYBERCOM access platform build out capacity (Joint Access Platforms, formerly Combatant Command Support and Operate and Defend the DODIN)				▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓

PE 0306250F: *Cyber Operations Technology Development*
Air Force

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0306250F / Cyber Operations Technology Development	**Project (Number/Name)** 646008 / US Cyber Command Technology Development

	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	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
13. Cyber data flow cross domain solution (Joint Access Platforms, formerly Combatant Command Support and Operate and Defend the DODIN)																												
14. Mission-based platform IOC (Combatant Command Support and Operate and Defend the DODIN)																												
15. Mission-based platform FOC (Joint Access Platforms, formerly Combatant Command Support and Operate and Defend the DODIN)																												
16. DDoS for DODIN sustain (Joint Access Platforms, formerly Combatant Command Support and Operate and Defend the DODIN)																												
17. DDoS for DODIN spiral development (Joint Access Platforms)																												
18. Exploitation framework spiral development (annual) - (Joint Tools, formerly Combatant Command Support and Operate and Defend the DODIN)																												
19. Foundational tool suites (spirals annual) - (Joint Tools, formerly Combatant Command Support and Operate and Defend the DODIN)																												
20. Tool signature management study (Joint Tools, formerly Combatant Command and Support and Operate and Defend the DODIN)																												
21. Data analytics platform IOC (Joint Analytics, formerly Combatant Command Support and Operate and Defend the DODIN)																												

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0306250F / Cyber Operations Technology Development	**Project (Number/Name)** 646008 / US Cyber Command Technology Development

	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	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
22. Analytics tools development (Joint Analytic, formerly Combatant Command Support and Operate and Defend the DODIN)																												

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 *I* 4	**R-1 Program Element (Number/Name)** PE 0306250F *I Cyber Operations Technology Development*	**Project (Number/Name)** 646008 *I US Cyber Command Technology Development*

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Cyber Operations Technology Development				
1. UP AoA (Joint Common Services, formerly Defend the Nation)	1	2017	4	2018
2. UP RR (Joint Common Services, formerly Defend the Nation)	1	2017	4	2018
3. Cyber C2 Pilot (Joint Common Services, formerly Defend the Nation)	1	2017	4	2017
4. Cyber C2 FOC (Joint Common Services)	1	2018	4	2019
5. Cyber C2 Spiral Development (Joint Common Services)	1	2020	4	2023
6. Cyber SA Prototype (Joint Common Services, formerly Defend the Nation)	1	2017	4	2018
7. Data analytics platform next GEN (Joint Common Services)	2	2018	2	2020
8. Cyber UCAP FOC (Joint Common Services, formerly Defend the Nation)	1	2017	2	2018
9. Cyber UCAP Spiral Development - 1 (Joint Common Services)	3	2019	1	2021
10. Cyber UCAP Spiral Development - 2 (Joint Common Services)	4	2023	4	2023
11. CYBERCOM access platform IOC (Joint Access Platforms, formerly Combatant Command Support and Operate and Defend the DODIN)	1	2017	4	2019
12. CYBERCOM access platform build out capacity (Joint Access Platforms, formerly Combatant Command Support and Operate and Defend the DODIN)	3	2017	4	2023
13. Cyber data flow cross domain solution (Joint Access Platforms, formerly Combatant Command Support and Operate and Defend the DODIN)	1	2017	4	2019
14. Mission-based platform IOC (Combatant Command Support and Operate and Defend the DODIN)	1	2017	3	2017
15. Mission-based platform FOC (Joint Access Platforms, formerly Combatant Command Support and Operate and Defend the DODIN)	4	2017	3	2022
16. DDoS for DODIN sustain (Joint Access Platforms, formerly Combatant Command Support and Operate and Defend the DODIN)	1	2017	4	2019
17. DDoS for DODIN spiral development (Joint Access Platforms)	1	2018	4	2023

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Air Force					Date: February 2018	
Appropriation/Budget Activity 3600 / 4			R-1 Program Element (Number/Name) PE 0306250F / Cyber Operations Technology Development		Project (Number/Name) 646008 / US Cyber Command Technology Development	

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
18. Exploitation framework spiral development (annual) - (Joint Tools, formerly Combatant Command Support and Operate and Defend the DODIN)	2	2017	4	2023
19. Foundational tool suites (spirals annual) - (Joint Tools, formerly Combatant Command Support and Operate and Defend the DODIN)	2	2017	4	2023
20. Tool signature management study (Joint Tools, formerly Combatant Command and Support and Operate and Defend the DODIN)	2	2017	4	2018
21. Data analytics platform IOC (Joint Analytics, formerly Combatant Command Support and Operate and Defend the DODIN)	1	2017	4	2018
22. Analytics tools development (Joint Analytic, formerly Combatant Command Support and Operate and Defend the DODIN)	1	2017	4	2023