Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Air Force										Date: February 2019	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force I* BA 7: *Operational Systems Development*					**R-1 Program Element (Number/Name)** PE 0208097F *I Joint Cyber Command and Control (JCC2)*						
COST ($ in Millions)	**Prior Years**	**FY 2018**	**FY 2019**	**FY 2020 Base**	**FY 2020 OCO**	**FY 2020 Total**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**Cost To Complete**	**Total Cost**
Total Program Element	-	0.000	13.000	11.603	0.000	11.603	11.602	12.564	12.702	12.840	Continuing	Continuing
676045: *Foundational Efforts*	-	0.000	13.000	11.603	0.000	11.603	11.602	12.564	12.702	12.840	Continuing	Continuing

Note

In FY20, PE 0306250F, Cyber Operations Technology Development efforts were transferred to PE 0208097F, Joint Cyber Command and Control (JCC2) efforts in order to enable Executive Agent oversight and management and to provide adequate oversight and Service stakeholder transparency.

A. Mission Description and Budget Item Justification

Joint Cyber Command and Control (JCC2) provides Combatant Commanders, Joint Force Commanders and Service Component Commanders with enhanced situational awareness and battle management for cyberspace operations missions and forces. JCC2 establishes congressionally directed focal point to provide integrated JCC2 solutions to all echelons for execution of cyberspace operations to enable and accelerate planning/collaboration between Cyber Mission Forces and Combatant Commands (CCMD).

It will integrate Cyber C2 with Joint, Coalition and inter-agency C2 to enhance multi-domain operations, reduce planning time, improve decision quality and speed resulting in a shorter kill chain. Capabilities will be developed to address the Cyber Mission Forces used to conduct cyber operations. Additionally, it will establish the Continuous Infrastructure/Continuous Development (CI/CD) Framework (a cyber factory) to pace development with warfighter need. JCC2 development activities include, but are not limited to: rapid prototyping, development of software/hardware systems; integration and transition of lab developed cyber capabilities to the warfighter; testing and evaluation; program management administration, studies, analysis, pilots, demonstrations; risk reduction for emerging technologies; and development and assessment of operational systems for inclusion into JCC2 to meet capability requirements.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver JCC2 capabilities. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605826F, 0605827F, 0605828F, 0605829F, 0605830F, 0605831F, 0605832F, 0605898F, and 0605833F.

As directed in the FY 2018 NDAA, Sec 825, amendment to PL 114-92 FY 2016 NDAA, Sec 828 Penalty for Cost Overruns, the FY 2018 Air Force penalty total is $14.373M. The calculated percentage reduction to each research, development, test and evaluation and procurement account will be allocated proportionally from all programs, projects, or activities under such account.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Air Force				Date: February 2019	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* I BA 7: *Operational Systems Development*			**R-1 Program Element (Number/Name)** PE 0208097F I *Joint Cyber Command and Control (JCC2)*		

B. Program Change Summary ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Previous President's Budget	0.000	13.000	0.000	0.000	0.000
Current President's Budget	0.000	13.000	11.603	0.000	11.603
Total Adjustments	0.000	0.000	11.603	0.000	11.603
• 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	11.603	0.000	11.603

Exhibit R-2A, RDT&E Project Justification: PB 2020 Air Force										Date: February 2019	

Appropriation/Budget Activity 3600 I 7				R-1 Program Element (Number/Name) PE 0208097F I Joint Cyber Command and Control (JCC2)						Project (Number/Name) 676045 I Foundational Efforts	

COST ($ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
676045: Foundational Efforts	-	0.000	13.000	11.603	0.000	11.603	11.602	12.564	12.702	12.840	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

In FY20, PE 0306250F, Cyber Operations Technology Development efforts were transferred to PE 0208097F, Joint Cyber Command and Control (JCC2) efforts in order to enable Executive Agent oversight and management, and to provide adequate oversight and Service stakeholder transparency.

A. Mission Description and Budget Item Justification

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020
Title: Foundational Efforts	0.000	13.000	11.603
Description: Foundational Efforts are program activities, at multiple operating locations, supporting development and evaluations activities and JCC2 baseline efforts to retain capability. Actions include system and software engineering, risk management, developmental framework management, and the execution of acquisition activities. **FY 2019 Plans:** - Develop pilot tools to automate the sharing of cyber threat data at CCMDs - Evaluate capabilities for data sharing of cyber threat			

Exhibit R-2A, **RDT&E Project Justification:** PB 2020 Air Force		**Date:** February 2019
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0208097F / *Joint Cyber Command and Control (JCC2)*	**Project (Number/Name)** 676045 / *Foundational Efforts*

B. Accomplishments/Planned Programs ($ in Millions)	**FY 2018**	**FY 2019**	**FY 2020**
- Begin agile acquisition activities to support DevOps tempo - Stand up program office - Execute of acquisition activities and development of requisite documentation *FY 2020 Plans:* - Will develop capabilities and initiate the Cyber Tasking Order used in CMF to conduct cyber operations - Will expand program office to support JCC2 requirements development packages - Will build-up DevOps teams for continued piloting at CCMDs - Will stand up development environment, i.e., hosting services, infrastructure - Will integrate optimal Situational Awareness (SA) capabilities to integrate automated threat information sharing and collaboration *FY 2019 to FY 2020 Increase/Decrease Statement:* Funding decreased due to reduced deployment of development activities at CCMDs.			
Accomplishments/Planned Programs Subtotals	0.000	13.000	11.603

C. Other Program Funding Summary ($ in Millions)

 N/A

Remarks

D. Acquisition Strategy

 JCC2 is pre-Material Development Decision (MDD). JCC2 will apply agile acquisition tenets to the programmatic, design/engineering, test and delivery aspects to provide an ability to deliver Situational Awareness/C2 capabilities to the warfighter in a rapid manner. JCC2 is currently researching the option to leverage the FY16 National Defense Authorization Act (NDAA) Section 804 or other streamlined approaches to agile acquisition. The JCC2 program office will utilize new and existing contract vehicles and concept, development, risk management, production, or deployment plans as part of a streamlined approach. The JCC2 program office will establish continuous integration/continuous development pipeline to facilitate the rapid development, integration, and fielding of capabilities to remain responsive to evolving warfighter requirements. The JCC2 program will execute the agile development requirements provided by the Army, Navy, Marine Corps, Air Force, and USCYBERCOM stakeholder in accordance with the prioritization provided by the multi-Service JCC2 governance structure. The initial JCC2 capability will deliver a minimum viable product (MVP) for immediate deployment and operational use. Subsequent build iterations will continue to deliver enhanced capabilities incrementally building the JCC2 capability to match warfighter needs. The JCC2 baseline capability relies on extensive development and evaluation efforts to analyze integration constraints and opportunities of Service-specific cyber capabilities.

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 2020 Air Force		**Date:** February 2019
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0208097F / *Joint Cyber Command and Control (JCC2)*	**Project (Number/Name)** 676045 / *Foundational Efforts*

Product Development ($ in Millions)				**FY 2018**		**FY 2019**		**FY 2020 Base**		**FY 2020 OCO**		**FY 2020 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**
JCC2 CI/CD Infrastructure	Various	Multiple : Multiple	-	-		3.600	Mar 2019	-		-		-	Continuing	Continuing	-
JCC2 Agile Capability Development	Various	Multiple : Multiple	-	-		5.500	Mar 2019	9.715	Jan 2020	-		9.715	Continuing	Continuing	-
		Subtotal	-	-		9.100		9.715		-		9.715	Continuing	Continuing	N/A

Management Services ($ in Millions)				**FY 2018**		**FY 2019**		**FY 2020 Base**		**FY 2020 OCO**		**FY 2020 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**
JCC2 Acquisition Support	Various	Multiple : Multiple	-	-		3.900	Mar 2019	1.888	Nov 2019	-		1.888	Continuing	Continuing	-
		Subtotal	-	-		3.900		1.888		-		1.888	Continuing	Continuing	N/A

	Prior Years	**FY 2018**	**FY 2019**	**FY 2020 Base**	**FY 2020 OCO**	**FY 2020 Total**	**Cost To Complete**	**Total Cost**	**Target Value of Contract**
Project Cost Totals	-	-	13.000	11.603	-	11.603	Continuing	Continuing	N/A

Remarks

CI/CD - Continuous Integration/Continuous Development

Transition USCC pilot systems to USAF references that the USAF was designated the lead service via being named the Executive Agent. The pilot systems transferred currently have operational users and are being evaluated for best of breed features and architecture to be further developed into the overarching JCC2 capability requirements.

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Air Force		**Date:** February 2019
Appropriation/Budget Activity 3600 *I* 7	**R-1 Program Element (Number/Name)** PE 0208097F *I Joint Cyber Command and Control (JCC2)*	**Project (Number/Name)** 676045 *I Foundational Efforts*

	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024			
	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
Foundational Events																												
Transition USCC pilot systems to USAF					███████████████																							
JCC2 CI/CD Infrastructure					██																							
JCC2 Agile Capability Development						██																						
JCC2 Acquisition Support					██																							

Exhibit R-4A, **RDT&E Schedule Details:** PB 2020 Air Force		**Date:** February 2019
Appropriation/Budget Activity 3600 *I* 7	**R-1 Program Element (Number/Name)** PE 0208097F *I Joint Cyber Command and Control (JCC2)*	**Project (Number/Name)** 676045 *I Foundational Efforts*

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Foundational Events				
Transition USCC pilot systems to USAF	1	2019	1	2020
JCC2 CI/CD Infrastructure	1	2019	4	2024
JCC2 Agile Capability Development	2	2019	4	2024
JCC2 Acquisition Support	1	2019	4	2024

Note

Transition USCC pilot systems to USAF references that the USAF was designated the lead service via being named the Executive Agent. The pilot systems transferred currently have operational users and are being evaluated for best of breed features and architecture to be further developed into the overarching JCC2 capability requirements.