

UNCLASSIFIED

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 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</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
Total Program Element	-	57.671	56.325	69.783	0.000	69.783	79.688	79.618	76.449	74.347	Continuing	Continuing
642810: <i>Cyber Workforce Development</i>	-	9.986	8.200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
642812: <i>Acquisition/System Security Engineering</i>	-	2.746	17.001	31.579	0.000	31.579	34.587	35.279	34.875	33.916	Continuing	Continuing
642816: <i>Agile/Adaptable Standards</i>	-	19.420	7.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
642834: <i>Mitigations</i>	-	23.008	17.036	31.307	0.000	31.307	37.527	36.902	34.583	33.633	Continuing	Continuing
642836: <i>Mission Risk Analysis</i>	-	2.511	6.838	6.897	0.000	6.897	7.574	7.437	6.991	6.798	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program funds activities at the Cyber Resiliency Office for Weapon Systems (CROWS), which provides cyber capabilities and acquisition support to weapon system programs across the Air Force. CROWS increases cyber resiliency of Air Force weapon systems to maintain mission effective capability under adverse conditions. Its goals are to bake cyber resiliency into new weapons systems and mitigate critical vulnerabilities in fielded weapon systems.

To meet these goals, this program addresses cyber resiliency and security gaps in three primary activities. The first activity is to develop systems security engineering tools, techniques and procedures as well as associated training and education to build cyber expertise within acquisition workforce, to include developing a common secure environment to enable effective sharing of cyber intelligence and vulnerability information across multiple acquisition programs. It also includes identifying emerging technologies for further development and prototyping to posture Air Force weapon systems to counter emerging threats. The second activity is to conduct threat informed weapon systems solution analysis, identify and prioritize vulnerabilities and identify, develop and present courses of action to develop materiel and non-materiel mitigation trade space. The third activity is to design mitigation strategies and prototype mitigation solutions to critical vulnerabilities, with emphasis on those that affect multiple weapon systems.

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

In FY 2021, Project 642812 is renamed from System Security Engineering to Acquisition/System Security Engineering.

In FY 2021, the entirety of work under Project 642810, Cyber Workforce Development, and Project 642816, Agile/Adaptable Standards, will be transferred to Project 642812, Acquisition/System Security Engineering, to better align scope and resources associated with Cyber Resiliency of Weapon Systems activities.

In FY 2021, Project 642834 is renamed from Mission Assurance for Fielded Systems to Mitigations.

UNCLASSIFIED

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 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>
--	---

In FY 2021, Project 642836 is renamed from Mission Thread Analysis to Mission Risk Analysis.

The FY 2021 funding request was reduced by \$4.622 million to account for availability of prior year execution balances.

As directed in the FY 2018 NDAA, Sec 825, amendment to PL 114-92 FY 2016 NDAA, Sec 826 Penalty for Cost Overruns, the FY 2019 Air Force penalty total is \$50.0M. 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 effort 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.

B. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	62.618	56.325	74.535	0.000	74.535
Current President's Budget	57.671	56.325	69.783	0.000	69.783
Total Adjustments	-4.947	0.000	-4.752	0.000	-4.752
• 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	-3.000	0.000			
• SBIR/STTR Transfer	-1.947	0.000			
• Other Adjustments	0.000	0.000	-4.752	0.000	-4.752

Change Summary Explanation

Decrease in FY 2019 of \$3.000 million is due to reprogramming for funding AFLCMC/HNC Information Systems Security Program (ISSP) Trusted System Network (TSN) requirement in PE 0303140F.

Decrease in FY 2021 of \$4.752 million is due to Department of Defense inflationary adjustments and to account for availability of prior year execution balances.

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2021 Air Force										Date: February 2020		
Appropriation/Budget Activity 3600 / 4					R-1 Program Element (Number/Name) PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>				Project (Number/Name) 642810 / <i>Cyber Workforce Development</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
642810: <i>Cyber Workforce Development</i>	-	9.986	8.200	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

The Cyber Workforce Development project develops and transitions cyber resiliency training, manning strategies, and deploys teams providing cyber acquisition experts to Program Executive Offices (PEO) to address acquisition workforce gaps in cyber resiliency/security manpower, experience, and knowledge. This project hones workforce expertise and skills required to counter weapon system-unique cyber threats, which exceeds the knowledge needed to secure Internet Protocol (IP) based systems against traditional network-based cyber threats. Such expertise is critical for acquisition professionals to ensure cyber resiliency/security design tenets are integrated into the weapon system life cycle.

In FY 2021, the entirety of work under Project 642810, Cyber Workforce Development, will be transferred to Project 642812, Acquisition/System Security Engineering, to better align scope and resources associated with Cyber Resiliency of Weapon Systems activities.

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

	FY 2019	FY 2020	FY 2021
Title: Increase Acquisition Workforce Cyber Expertise	9.986	8.200	0.000
Description: Increases knowledge and advanced skills of acquisition workforce.			
FY 2020 Plans: Continue to compile threat, weapon system and technology gaps and integrate this information into the Air Force weapon system cyber resiliency training curriculum to reduce enterprise risk. Identify cyber security/resiliency skill gaps in the functional areas of the acquisition workforce. Continue to expand and improve/validate Cyber Focus Team proof-of-concept based on PEO feedback. Execute hiring and retention strategy for skilled weapon system cyber resiliency acquisition professionals.			
FY 2021 Plans: In FY 2021, the work under this effort will be transferred to the Prototype, Evaluate, and Transition System Security Engineering effort under Project 642812, Acquisition/System Security Engineering.			
FY 2020 to FY 2021 Increase/Decrease Statement: FY 2021 decreased compared to FY 2020 by \$8.200 million. Funding decreased due to realignment of Increase Acquisition Workforce Cyber Expertise activities to the Prototype, Evaluate, and Transition Systems Security Engineering effort under Project 642812, Acquisition/System Security Engineering.			
Accomplishments/Planned Programs Subtotals	9.986	8.200	0.000

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2021 Air Force		Date: February 2020
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>	Project (Number/Name) 642810 / <i>Cyber Workforce Development</i>

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

N/A

Remarks

D. Acquisition Strategy

When possible, activities in this effort will leverage current competitively-awarded contracts. Additional necessary contracts funded in this program element will be awarded using either competitive or sole source procedures, whichever is most appropriate. The government agency responsible for managing the program is the Air Force Life Cycle Management Center, Cyber Resiliency Office for Weapons Systems, Wright-Patterson Air Force Base, Ohio and Hanscom Air Force Base, Massachusetts.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Air Force **Date:** February 2020

Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>	Project (Number/Name) 642810 / <i>Cyber Workforce Development</i>
--	---	---

Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Education and Training (AFRL, AFIT, DAU)	Various	Various : Various	-	5.596	Apr 2019	0.730	Feb 2020	0.000		-		0.000	0.000	6.326	-
Subtotal			-	5.596		0.730		0.000		-		0.000	0.000	6.326	N/A

Remarks
In FY 2021, the entirety of work under Project 642810, Cyber Workforce Development, will be transferred to Project 642812, Acquisition/System Security Engineering, to better align scope and resources associated with Cyber Resiliency of Weapon Systems activities.

Support (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
MITRE	Various	Various : Bedford, MA	-	0.000	Oct 2018	6.688	Nov 2019	0.000		-		0.000	0.000	6.688	-
SMC Aerospace	Various	Various : El Segundo, CA	-	1.800	Jun 2019	-		-		-		-	0.000	1.800	-
Subtotal			-	1.800		6.688		0.000		-		0.000	0.000	8.488	N/A

Remarks
In FY 2021, the entirety of work under Project 642810, Cyber Workforce Development, will be transferred to Project 642812, Acquisition/System Security Engineering, to better align scope and resources associated with Cyber Resiliency of Weapon Systems activities.

Management Services (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
A&AS, Travel, Government Purchase Card	Various	Various : Various	-	2.590	Apr 2019	0.782	Nov 2019	0.000		-		0.000	0.000	3.372	-
Subtotal			-	2.590		0.782		0.000		-		0.000	0.000	3.372	N/A

Remarks
In FY 2021, the entirety of work under Project 642810, Cyber Workforce Development, will be transferred to Project 642812, Acquisition/System Security Engineering, to better align scope and resources associated with Cyber Resiliency of Weapon Systems activities.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Air Force							Date: February 2020				
Appropriation/Budget Activity 3600 / 4			R-1 Program Element (Number/Name) PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>				Project (Number/Name) 642810 / <i>Cyber Workforce Development</i>				
	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract		
Project Cost Totals	-	9.986	8.200	0.000	-	0.000	0.000	18.186	N/A		

Remarks
 In FY 2021, the entirety of work under Project 642810, Cyber Workforce Development, will be transferred to Project 642812, Acquisition/System Security Engineering, to better align scope and resources associated with Cyber Resiliency of Weapon Systems activities.

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Air Force		Date: February 2020
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>	Project (Number/Name) 642810 / <i>Cyber Workforce Development</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
<i>Cyber Workforce Development</i>																												
Deploy Cyber Resiliency Support Team																												
Deploy Cyber Focus Teams																												
Develop basic weapon system cyber awareness training																												
Develop advanced weapon system cyber training																												
Hire/retain cyber security professionals																												

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Air Force		Date: February 2020
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>	Project (Number/Name) 642810 / <i>Cyber Workforce Development</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Cyber Workforce Development</i>				
Deploy Cyber Resiliency Support Team	1	2019	4	2019
Deploy Cyber Focus Teams	3	2019	4	2020
Develop basic weapon system cyber awareness training	1	2019	4	2020
Develop advanced weapon system cyber training	1	2019	4	2020
Hire/retain cyber security professionals	1	2019	4	2020

Note

In FY 2021, the entirety of work under Project 642810, Cyber Workforce Development, will be transferred to Project 642812, Acquisition/System Security Engineering, to better align scope and resources associated with Cyber Resiliency of Weapon Systems activities.

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2021 Air Force										Date: February 2020		
Appropriation/Budget Activity 3600 / 4					R-1 Program Element (Number/Name) PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>				Project (Number/Name) 642812 / <i>Acquisition/System Security Engineering</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
642812: <i>Acquisition/System Security Engineering</i>	-	2.746	17.001	31.579	0.000	31.579	34.587	35.279	34.875	33.916	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Acquisition/System Security Engineering activity develops Air Force and Department of Defense system security engineering and acquisition security processes, policies, and contracting language, and refines intelligence collection and processes to provide actionable information on cyber threats to the weapons system community. This activity bolsters Air Force cyber resiliency/security by developing common secure environments for Program Offices to share information on classified weapon system cyber intelligence, threats, and vulnerabilities. It also encompasses developing cyber resiliency training, manning strategies, and Cyber Focus Teams, which provide cyber acquisition expertise to Program Executive Offices (PEO) to address acquisition workforce gaps in cyber resiliency/security manpower, experience, and knowledge. This project hones workforce expertise and skills required to counter weapon system-unique cyber threats, which exceeds the knowledge needed to secure Internet Protocol (IP) based systems against traditional network-based cyber threats. Such expertise is critical for acquisition professionals to ensure cyber resiliency/security design tenets are integrated into the weapon system life cycle. Finally, this project includes identification, evaluation, and prioritization of emerging cyber techniques, products, and technologies for further development and prototyping to posture Air Force weapon systems to counter emerging threats. This activity supports Air Force Program Offices, the Protecting Critical Technologies Task Force, Defense Industrial Base data protection efforts, Air Force Supply Chain Risk Management, and other weapon system cyber security/resiliency activities as required.

In FY 2021, Project 642812 is renamed from System Security Engineering to Acquisition/System Security Engineering.

In FY 2021, the entirety of work under Project 642810, Cyber Workforce Development, and Project 642816, Agile/Adaptable Standards, will be transferred to Project 642812, Acquisition/System Security Engineering, to better align scope and resources associated with Cyber Resiliency of Weapon Systems activities.

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

	FY 2019	FY 2020	FY 2021
Title: Prototype, Evaluate, and Transition System Security Engineering	2.746	17.001	31.579
Description: Prototypes, evaluates, and transitions cyber security and resiliency activities into policy, processes, products, and people.			
FY 2020 Plans: Continue prototyping a common cyber security environment for sharing of cyber information across Air Force weapon systems. Continue to refine and execute intelligence collection/analysis to identify cyber threats and cyber posture for specific weapon			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2021 Air Force		Date: February 2020		
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>	Project (Number/Name) 642812 / <i>Acquisition/System Security Engineering</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2019	FY 2020	FY 2021
<p>systems. Deliver next iteration of product prototypes, tools, policy and processes to integrate cyber resiliency/security in all phases and activities of weapons system acquisition.</p> <p>FY 2021 Plans: Continue to evolve the Acquisition/SSE requirements, processes, policies, and contracting language to influence cyber resiliency in all phases of the acquisition process. Refine intelligence collection and processes to provide actionable information on cyber threats to the weapons system community. Continue developing common security environments to enable Program Offices to collaborate/share information on classified weapon system cyber intelligence threats and vulnerabilities. Continue to deliver cyber expertise to PEOs through the Cyber Focus Team (CFT) manpower, identify acquisition cyber resiliency training gaps and develop training to support acquisition workforce. Continue identification, evaluation, and prioritization of emerging cyber techniques, products, and technologies for further development and prototyping to posture Air Force weapon systems to counter emerging threats.</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: FY 2021 increased compared to FY 2020 by \$14.578 million. Funding increased due to the consolidation of all work from the Increase Acquisition Workforce Cyber Expertise effort in Project 642810, Workforce Development, and the Agile and Adaptable Standards effort in Project 642816, Agile/Adaptable Standards into this effort.</p>				
Accomplishments/Planned Programs Subtotals		2.746	17.001	31.579
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
When possible, activities in this effort will leverage current competitively-awarded contracts. Additional necessary contracts funded in this program element will be awarded using either competitive or sole source procedures, whichever is most appropriate. The government agency responsible for managing the program is the Air Force Life Cycle Management Center, Cyber Resiliency Office for Weapons Systems, Wright-Patterson Air Force Base, Ohio and Hanscom Air Force Base, Massachusetts.				

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Air Force **Date:** February 2020

Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>	Project (Number/Name) 642812 / <i>Acquisition/System Security Engineering</i>
--	---	---

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
Common Cyber Security Environment	Various	Various : Various	-	1.000	Apr 2019	9.550	Nov 2019	7.600	Nov 2020	-		7.600	Continuing	Continuing	-
Products, policy, and processes in the acq life cycle and sustainment process	Various	Various : Various	-	0.738	Apr 2019	0.000		0.000		-		0.000	0.000	0.738	-
Intel collection skills to identify cyber threats to weapon systems	Various	Various : Various	-	0.738	Dec 2019	6.995	Dec 2019	6.500	Dec 2020	-		6.500	Continuing	Continuing	-
Education and Training (AFRL, AFIT, DAU)	Various	Various : Various	-	0.000		0.000		0.900	Jan 2021	-		0.900	Continuing	Continuing	-
Cyber Resiliency Technologies Development	Various	Various : Various	-	0.000		0.000		10.119	Nov 2020	-		10.119	Continuing	Continuing	-
Subtotal			-	2.476		16.545		25.119		-		25.119	Continuing	Continuing	N/A

Remarks
 Previous to FY 2021, Cyber Workforce Development activities are reported under Project 642810, Cyber Workforce Development, and Agile/Adaptable Standards activities are reported under Project 642816, Agile/Adaptable Standards.

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
System Security Engineering requirements, policy and guidance documents (DTIC)	Various	Various : Various	-	0.270	Feb 2019	0.456	Jan 2020	0.456	Jan 2021	-		0.456	Continuing	Continuing	-
MITRE	Various	Various : Bedford, MA	-	0.000		0.000		4.320	Oct 2020	-		4.320	Continuing	Continuing	-
Subtotal			-	0.270		0.456		4.776		-		4.776	Continuing	Continuing	N/A

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Air Force **Date:** February 2020

Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>	Project (Number/Name) 642812 / <i>Acquisition/System Security Engineering</i>
--	---	---

Support (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Remarks
Previous to FY 2021, Cyber Workforce Development activities are reported under Project 642810, Cyber Workforce Development, and Agile/Adaptable Standards activities are reported under Project 642816, Agile/Adaptable Standards.

Management Services (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
A&AS, Travel, Government Purchase Card	Various	Various : Various	-	0.000		0.000		1.684	Dec 2020	-		1.684	Continuing	Continuing	-
Subtotal			-	0.000		0.000		1.684		-		1.684	Continuing	Continuing	N/A

Remarks
Previous to FY 2021, Cyber Workforce Development activities are reported under Project 642810, Cyber Workforce Development, and Agile/Adaptable Standards activities are reported under Project 642816, Agile/Adaptable Standards.

	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals		-	2.746	17.001	31.579	-	31.579	Continuing	Continuing	N/A

Remarks
In FY 2021, the entirety of work under Project 642810, Cyber Workforce Development, and Project 642816, Agile/Adaptable Standards, will be transferred to Project 642812, Acquisition/System Security Engineering, to better align scope and resources associated with Cyber Resiliency of Weapon Systems activities.

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Air Force		Date: February 2020
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>	Project (Number/Name) 642812 / <i>Acquisition/System Security Engineering</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
Acquisition/System Security Engineering																												
Prototype and deliver common cyber security environments																												
Prototype and deliver enhanced system security engineering processes and products																												
Prototype and deliver cyber security design and contractual requirements																												
Prototype and deliver acquisition cyber intel analysis products and techniques																												
Develop advanced weapon system cyber training																												
Deploy cyber focus teams																												
Prototype advanced cyber resiliency technology																												

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Air Force		Date: February 2020
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>	Project (Number/Name) 642812 / <i>Acquisition/System Security Engineering</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Acquisition/System Security Engineering				
Prototype and deliver common cyber security environments	1	2019	4	2025
Prototype and deliver enhanced system security engineering processes and products	2	2019	4	2020
Prototype and deliver cyber security design and contractual requirements	1	2019	4	2022
Prototype and deliver acquisition cyber intel analysis products and techniques	1	2019	4	2025
Develop advanced weapon system cyber training	1	2021	4	2025
Deploy cyber focus teams	1	2021	4	2025
Prototype advanced cyber resiliency technology	1	2021	4	2025

Note

Previous to FY 2021, Cyber Workforce Development activities are reported under Project 642810, Cyber Workforce Development, and Agile/Adaptable Standards activities are reported under Project 642816, Agile/Adaptable Standards.

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2021 Air Force										Date: February 2020		
Appropriation/Budget Activity 3600 / 4					R-1 Program Element (Number/Name) PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>				Project (Number/Name) 642816 / <i>Agile/Adaptable Standards</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
642816: <i>Agile/Adaptable Standards</i>	-	19.420	7.250	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

The Agile/Adaptable Standards project identifies, evaluates and prioritizes emerging cyber techniques, products, and technologies for further development and prototyping to posture Air Force weapon systems to counter emerging threats.

In FY 2021, the entirety of work under Project 642816, Agile/Adaptable Standards, will be transferred to Project 642812, Acquisition/System Security Engineering, to better align scope and resources associated with Cyber Resiliency of Weapon Systems activities.

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

	FY 2019	FY 2020	FY 2021
Title: Agile and Adaptable Standards	19.420	7.250	0.000
Description: Develop, prototype, evaluate, and transition agile and adaptable system standards for integration into Air Force weapon systems.			
FY 2020 Plans: Continue open system architecture prototyping, integration and demonstration of components for use in advanced architectures (e.g. electronic warfare (EW), radar, Position, Navigation and Timing (PNT), etc.). Prototype and deliver techniques and methodologies to increase cyber security features of the advanced avionics Government and Regulatory Actions (GRA) and open standards. Continue prototyping the use of alternative navigation techniques and software defined receivers. Start developing a composite GRA for an advanced architectures to include major subsystems like EW, radar, PNT, communications/datalink, and autonomous functions.			
FY 2021 Plans: In FY 2021, the work under this effort will be transferred to the Prototype, Evaluate, and Transition System Security Engineering effort under Project 642812, Acquisition/System Security Engineering.			
FY 2020 to FY 2021 Increase/Decrease Statement: FY 2021 decreased compared to FY 2020 by \$7.250 million. Funding decreased due to realignment of Agile and Adaptable Standards activities to the Prototype, Evaluate, and Transition Systems Security Engineering effort under Project 642812, Acquisition/System Security Engineering.			
Accomplishments/Planned Programs Subtotals	19.420	7.250	0.000

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2021 Air Force		Date: February 2020
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>	Project (Number/Name) 642816 / <i>Agile/Adaptable Standards</i>

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

Remarks

D. Acquisition Strategy

When possible, activities in this effort will leverage current competitively-awarded contracts. Additional necessary contracts funded in this program element will be awarded using either competitive or sole source procedures, whichever is most appropriate. The government agency responsible for managing the program is the Air Force Life Cycle Management Center, Cyber Resiliency Office for Weapons Systems, Wright-Patterson Air Force Base, Ohio and Hanscom Air Force Base, Massachusetts.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Air Force **Date:** February 2020

Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>	Project (Number/Name) 642816 / <i>Agile/Adaptable Standards</i>
--	---	---

Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Cyber Resiliency Technology - Open system architecture	Various	Various : Various	-	2.832	Jun 2019	6.000	Feb 2020	0.000		-		0.000	0.000	8.832	-
Cyber Resiliency Technology - (Firesky, Pitchday, Cloud One)	Various	Various : Various	-	7.740	Jan 2019	1.250	Jan 2020	0.000		-		0.000	0.000	8.990	-
REGI Transition	Various	Various : Various	-	1.500	Aug 2019	-		0.000		-		0.000	0.000	1.500	-
Subtotal			-	12.072		7.250		0.000		-		0.000	0.000	19.322	N/A

Remarks
In FY 2021, the entirety of work under Project 642816, Agile/Adaptable Standards, will be transferred to Project 642812, Acquisition/System Security Engineering, to better align scope and resources associated with Cyber Resiliency of Weapon Systems activities.

Support (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Air Force Research Laboratory (AFRL) - SW Arch Health Improvement	Various	Various : Various	-	0.660	Aug 2019	0.000		0.000		-		0.000	0.000	0.660	-
MITRE	Various	Various : Bedford, MA	-	6.688	Oct 2018	0.000		0.000		-		0.000	0.000	6.688	-
Subtotal			-	7.348		0.000		0.000		-		0.000	0.000	7.348	N/A

Remarks
In FY 2021, the entirety of work under Project 642816, Agile/Adaptable Standards, will be transferred to Project 642812, Acquisition/System Security Engineering, to better align scope and resources associated with Cyber Resiliency of Weapon Systems activities.

	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		-	19.420	7.250	0.000	-	0.000	26.670	N/A

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Air Force							Date: February 2020			
Appropriation/Budget Activity 3600 / 4			R-1 Program Element (Number/Name) PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>			Project (Number/Name) 642816 / <i>Agile/Adaptable Standards</i>				
	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract	

Remarks
 In FY 2021, the entirety of work under Project 642816, Agile/Adaptable Standards, will be transferred to Project 642812, Acquisition/System Security Engineering, to better align scope and resources associated with Cyber Resiliency of Weapon Systems activities.

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Air Force		Date: February 2020
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>	Project (Number/Name) 642816 / <i>Agile/Adaptable Standards</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

Agile/Adaptable Standards	
Transition resilient embedded GPS/INS (REGI) technology and design to PNT Program Office	████████████████████
Prototype and update open standards	████████████████████

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Air Force		Date: February 2020
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>	Project (Number/Name) 642816 / <i>Agile/Adaptable Standards</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Agile/Adaptable Standards</i>				
Transition resilient embedded GPS/INS (REGI) technology and design to PNT Program Office	3	2019	3	2020
Prototype and update open standards	1	2020	4	2020

Note

In FY 2021, the entirety of work under Project 642816, Agile/Adaptable Standards, will be transferred to Project 642812, Acquisition/System Security Engineering, to better align scope and resources associated with Cyber Resiliency of Weapon Systems activities.

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2021 Air Force										Date: February 2020		
Appropriation/Budget Activity 3600 / 4					R-1 Program Element (Number/Name) PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>				Project (Number/Name) 642834 / <i>Mitigations</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
642834: <i>Mitigations</i>	-	23.008	17.036	31.307	0.000	31.307	37.527	36.902	34.583	33.633	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Mitigations activity prototypes mitigations to high risk cyber vulnerabilities and recommends a transition path for fielded weapon systems, subsystems, and support systems. The CROWS program will perform the engineering analysis and partner with program offices for the affected weapon systems to develop a mitigation strategy. The CROWS will lead the non-recurring engineering effort to prototype a solution that can be fielded on multiple weapons systems and transition the solution to the programs for implementation and sustainment. It will also develop a mitigation handbook that catalogs proven materiel solutions for use across Air Force weapon systems program offices to maximize return on investment in the prototyping activity.

In FY 2021, Project 642834 is renamed from Mission Assurance for Fielded Systems to Mitigations.

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

	FY 2019	FY 2020	FY 2021
Title: Cyber Mitigation Prototyping	23.008	17.036	31.307
Description: Evaluate weapon systems and conduct cyber risk assessments to identify, validate, and prioritize cyber vulnerabilities/susceptibilities. Partner with system owners and acquisition Program Offices to develop prototype mitigations.			
FY 2020 Plans: Continue prototyping mitigations for cyber vulnerabilities on fielded weapon systems, subsystems, and support systems in realistic, high fidelity environments. Collaborate with system owners and acquisition program offices to prototype mitigation projects and implement technology transfer of prototyped solutions within the associated acquisition program office. Develop centralized data repository for mitigations addressing weapon system cyber vulnerabilities.			
FY 2021 Plans: Continue prototyping mitigations for cyber vulnerabilities on fielded weapon systems, subsystems, and support systems in realistic, high fidelity environments. Collaborate with system owners and acquisition program offices to prototype mitigation projects and implement technology transfer of prototyped solutions within the associated acquisition program office. Develop centralized data repository for mitigations addressing weapon system cyber vulnerabilities.			
FY 2020 to FY 2021 Increase/Decrease Statement: FY 2021 increased compared for FY 2020 by \$14.271 million. Funding increased due to additional emphasis on identification of threat-informed risks/vulnerabilities with weapon system program offices and the associated mitigation projects.			
Accomplishments/Planned Programs Subtotals	23.008	17.036	31.307

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2021 Air Force		Date: February 2020
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>	Project (Number/Name) 642834 / <i>Mitigations</i>

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

N/A

Remarks

D. Acquisition Strategy

When possible, activities in this effort will leverage current competitively-awarded contracts. Additional necessary contracts funded in this program element will be awarded using either competitive or sole source procedures. The government agency responsible for managing the program is the Air Force Life Cycle Management Center, Cyber Resiliency Office for Weapons Systems, Wright-Patterson Air Force Base, Ohio and Hanscom Air Force Base, Massachusetts.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Air Force **Date:** February 2020

Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>	Project (Number/Name) 642834 / <i>Mitigations</i>
--	---	---

Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Material Solutions for Major Weapon Systems	Various	Various : Various	-	9.974	Dec 2018	5.797	Dec 2019	13.626	Dec 2020	-		13.626	Continuing	Continuing	-
Material Solutions for Subsystems	Various	Various : Various	-	4.990	Dec 2018	2.898	Dec 2019	6.813	Dec 2020	-		6.813	Continuing	Continuing	-
Non-Materiel Solutions	Various	Various : Various	-	2.993	Dec 2018	1.739	Dec 2019	4.088	Dec 2020	-		4.088	Continuing	Continuing	-
Mitigation Distribution Tool	Various	Various : Various	-	1.990	Dec 2018	1.159	Dec 2019	2.724	Dec 2020	-		2.724	Continuing	Continuing	-
Subtotal			-	19.947		11.593		27.251		-		27.251	Continuing	Continuing	N/A

Support (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Defense Technical Information Center (DTIC)	Various	Various : Various	-	0.000		0.240	Jan 2020	0.240	Jan 2021	-		0.240	Continuing	Continuing	-
Gartner	Various	Various : Various	-	0.151	Jun 2019	0.485	Dec 2019	0.000		-		0.000	Continuing	Continuing	-
Subtotal			-	0.151		0.725		0.240		-		0.240	Continuing	Continuing	N/A

Management Services (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
A&AS, Travel, Government Purchase Card	Various	Various : Various	-	2.910	Oct 2018	4.718	Oct 2019	3.816	Oct 2020	-		3.816	Continuing	Continuing	-
Subtotal			-	2.910		4.718		3.816		-		3.816	Continuing	Continuing	N/A

			Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	23.008	17.036	31.307	-	31.307	Continuing	Continuing	N/A

Remarks

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Air Force		Date: February 2020
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>	Project (Number/Name) 642834 / <i>Mitigations</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

Mitigations																												
Prototype cyber mitigations on known cyber vulnerabilities																												
Identify transition plan for tested mitigations to known cyber vulnerabilities																												
Mitigation Data Repository																												

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Air Force		Date: February 2020
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>	Project (Number/Name) 642834 / <i>Mitigations</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Mitigations				
Prototype cyber mitigations on known cyber vulnerabilities	1	2019	4	2025
Identify transition plan for tested mitigations to known cyber vulnerabilities	1	2019	4	2025
Mitigation Data Repository	1	2019	4	2025

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2021 Air Force										Date: February 2020		
Appropriation/Budget Activity 3600 / 4					R-1 Program Element (Number/Name) PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>				Project (Number/Name) 642836 / <i>Mission Risk Analysis</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
642836: <i>Mission Risk Analysis</i>	-	2.511	6.838	6.897	0.000	6.897	7.574	7.437	6.991	6.798	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Discover and analyze cyber susceptibilities/vulnerabilities to USAF weapon systems and characterize their impacts based on mission risk. Engineer cyber mitigation solutions that can be used across the USAF weapon systems to reduce mission risk. Promote the enhancement of cyber discovery methodologies and capabilities within USAF. Focus is on assessing the gaps and seams that exist between defined weapon system boundaries and within areas that are not assigned to specific weapon system program offices. This activity builds upon existing efforts regarding the identification and mitigation of cyber vulnerabilities, and does not duplicate similar ongoing efforts or conduct redundant assessments on systems that have already been evaluated. As the Acquisition/System Security Engineering activity under Project 642812 develops Cyber Focus Teams, additional, more robust assessment data sets will be generated for CROWS to continue identifying and validating vulnerabilities. This activity provides feedback to focus future assessments and also feeds into the Mitigations activity under Project 642834.

In FY 2021, Project 642836 is renamed from Mission Thread Analysis to Mission Risk Analysis.

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

	FY 2019	FY 2020	FY 2021
Title: Cyber Mission Risk Analysis	2.511	6.838	6.897
Description: Discovers, analyzes and coordinates sharing of information in support of cyber risk discovery activities for USAF weapon systems.			
FY 2020 Plans: Coordinate cyber vulnerability assessments with FY16 National Defense Authorization Act section 1647, existing program office analyses, and Cyber Focus Teams. Develop solutions to find, assess, and share cyber vulnerabilities through an enterprise-level data analysis capability. Guide and assist cyber mission risk analysis as needed.			
FY 2021 Plans: Continue to coordinate cyber vulnerability assessments and develop a capability to provide focused assessments where required. Continue developing solutions to find, assess and share cyber vulnerabilities through an enterprise-level data analysis capability.			
FY 2020 to FY 2021 Increase/Decrease Statement: FY 2021 increased compared to FY 2020 by \$0.059 million. Funding increased due to additional emphasis on continued Cyber Mission risk analysis and discovery on weapons systems and across mission areas.			
Accomplishments/Planned Programs Subtotals	2.511	6.838	6.897

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2021 Air Force		Date: February 2020
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>	Project (Number/Name) 642836 / <i>Mission Risk Analysis</i>

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

Remarks

D. Acquisition Strategy

When possible, activities in this effort will leverage current competitively-awarded contracts. Additional necessary contracts funded in this program element will be awarded using either competitive or sole source procedures, whichever is most appropriate. The government agency responsible for managing the program is the Air Force Life Cycle Management Center, Cyber Resiliency Office for Weapons Systems, Wright-Patterson Air Force Base, Ohio and Hanscom Air Force Base, Massachusetts.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Air Force **Date:** February 2020

Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>	Project (Number/Name) 642836 / <i>Mission Risk Analysis</i>
--	---	---

Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Air Force Research Laboratory (AFRL), Automatic Thread Generation, Mission Thread Analysis Tools	Various	Various : Various	-	1.911	Feb 2019	0.000		0.000		-		0.000	Continuing	Continuing	-
Risk Analysis and Discovery	Various	Various : Various	-	0.000	Apr 2019	4.038	Jan 2020	4.066	Dec 2020	-		4.066	Continuing	Continuing	-
Data Repository	Various	Various : Various	-	0.000		2.800	Jan 2020	2.831	Dec 2020	-		2.831	Continuing	Continuing	-
Subtotal			-	1.911		6.838		6.897		-		6.897	Continuing	Continuing	N/A

Support (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Defense Technical Information Center (DTIC)	Various	Various : Various	-	0.600	Apr 2019	0.000		0.000		-		0.000	Continuing	Continuing	-
Subtotal			-	0.600		0.000		0.000		-		0.000	Continuing	Continuing	N/A

			Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	2.511	6.838	6.897	-	6.897	Continuing	Continuing	N/A

Remarks

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Air Force		Date: February 2020
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>	Project (Number/Name) 642836 / <i>Mission Risk Analysis</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Mission Risk Analysis</i>				
Develop, institutionalize and utilize a Data Aggregation & Analytics Tool (DAAT).	2	2019	4	2025
Execute risk analysis and discovery on weapons systems and across mission areas. Leverage and augment existing and emerging assessment environments and tools.	1	2020	4	2025
Engineer solution candidates for reducing cyber risk with USAF weapon systems.	1	2020	4	2025