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 5: *System Development & Demonstration (SDD)*

R-1 Program Element (Number/Name)
PE 0605056F *I Open Architecture Management*

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	0.000	30.000	0.000	30.000	25.000	25.000	25.000	25.000	Continuing	Continuing
656060: *Standards Management*	-	0.000	0.000	30.000	0.000	30.000	25.000	25.000	25.000	25.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Open Architecture Management (OAM) Office (OAMO) at the Air Force Life Cycle Management Center is responsible for developing, evolving, and managing open standards. Open standards permit Department of Defense programs to reduce acquisition and life-cycle costs as well as the risks associated with development, sustainment, technology refresh, and capability upgrades of mission systems on weapon systems. The first standards the office will manage are the Open Mission Systems (OMS) Standard and the Universal Command and Control (C2) Interface (UCI) Standard, formerly known as the Unmanned Aerospace Systems (UAS) C2 Initiative.

OAMO provides funding to multiple entities, including the Air Force Research Laboratory (AFRL), the 76th Software Maintenance Group (76 SMXG), and the Massachusetts Institute of Technology - Lincoln Labs (MIT-LL) in support of standards management activities. AFRL is responsible for executing science and technology initiatives to further develop the OMS/UCI Standards. The 76 SMXG is responsible for key activities and deliverables for the OMS and UCI standards including: managing a collaboration tools environment, updating tools in the OMS/UCI Starter Kit, updating the Government critical abstraction layer, maintaining the Reference Implementation, integrating and testing the Mission Package, completing Change Package Development and Sponsorship, supporting the OMS and UCI management activities, providing support to adopting programs, and providing training and associated documentation. MIT-LL supports activities required to develop and deliver the anti-tamper (AT) standard.

Current Preplanned Product Improvements (P3I) include the development, test, and implementation of additional cybersecurity measures. The OAMO will execute other P3I initiatives as required. Other future initiatives may include activities such as specifically targeted improvements to the standards, coordination with other standardization efforts, additional and more thorough training activities, and widening the applicability of the OMS/UCI standard.

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

The Open Architecture Management Program Element is new for FY 2020. The entirety of Open Architecture Management activities transferred from a classified Air Force RDT&E Program Element to unclassified PE 0605056F, Open Architecture Management, in order to increase Congressional transparency. This is not a new start; it is an administrative realignment.

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 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605056F *I Open Architecture Management*	

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 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 2018**	**FY 2019**	**FY 2020 Base**	**FY 2020 OCO**	**FY 2020 Total**
Previous President's Budget	0.000	0.000	0.000	0.000	0.000
Current President's Budget	0.000	0.000	30.000	0.000	30.000
Total Adjustments	0.000	0.000	30.000	0.000	30.000
• 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	30.000	0.000	30.000

Change Summary Explanation

Increase in FY 2020 is due to transitioning Open Architecture Management from a classified Air Force RDT&E PE to PE 0605056F - Open Architecture Management to provide additional Congressional transparency.

C. Accomplishments/Planned Programs ($ in Millions)	**FY 2018**	**FY 2019**	**FY 2020**
Title: Open Architecture Management Office	0.000	0.000	30.000
Description: Accomplish all industry activities that result in the annual release of the OMS and UCI standards along with the associated documentation, including training materials. Manage government activities to support the OMS and UCI Standards. Conduct other preplanned activities to add additional capability and evolve the standards. **FY 2019 Plans:** In FY 2019 and prior, this work is being performed in a classified Air Force RDT&E PE. Additional details can be provided in an appropriate forum. **FY 2020 Plans:**			

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 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605056F *I Open Architecture Management*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020
Continue to modify and update the existing OMS and UCI standards to widen the pool of OMS/UCI applicability, account for emerging technologies, and adjust for program specific needs. In coordination with industry partners develop annual releases of the OMS/UCI standards, develop training and implementation materials, hold annual training events, and conduct quarterly common governance boards. Coordinate and provide government owned expertise and assets to standards development efforts. Develop an annual starter kit, update took kits, perform testing and integration activities, assist in the generation of an Anti-Tamper (AT) standard, and conduct other management and development activities. Ensure development of the standard incorporates cybersecurity considerations including message/data transfer security, cyber risk mitigation, and implementation standardization. Conduct other P3I initiatives, such as specifically targeted improvements to the standards, coordination with other standardization efforts, and additional training efforts, as required.			
FY 2019 to FY 2020 Increase/Decrease Statement: FY 2020 increased compared to FY 2019 by $30.000 million. Funding increased due to transitioning this effort from a classified Air Force RDT&E PE to PE 0605056F, Open Architecture Management, in FY 2020 to increase Congressional transparency.			
Accomplishments/Planned Programs Subtotals	0.000	0.000	30.000

D. Other Program Funding Summary ($ in Millions)

 N/A

Remarks

 In FY 2019 and prior, this work is being performed in a classified Air Force RDT&E PE. Additional details can be provided in an appropriate forum.

E. Acquisition Strategy

 The Air Force Life Cycle Management Center's OAMO awarded a follow-on contract to continue the standards management activities conducted under a previously classified Air Force RDT&E Program Element. The contract is a cost plus fixed fee (CPFF) indefinite delivery/indefinite quantity (ID/IQ) that was awarded in December 2018. The first delivery order has a period of performance of 3 years beginning 1 January 2019.

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 2020 Air Force													Date: February 2019	

Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0605056F / Open Architecture Management	Project (Number/Name) 656060 / Standards Management

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Open Architecture Collaborative Working Group - BAE Systems	SS/CPFF	BAE Systems : Nashua, NH	-	-		-		1.306	Jan 2020	-		1.306	Continuing	Continuing	-
Open Architecture Collaborative Working Group - Boeing	SS/CPFF	Boeing : St. Louis, MO	-	-		-		4.143	Jan 2020	-		4.143	Continuing	Continuing	-
Open Architecture Collaborative Working Group - General Atomics ASI	SS/CPFF	General Atomics ASI : Poway, CA	-	-		-		1.492	Jan 2020	-		1.492	Continuing	Continuing	-
Open Architecture Collaborative Working Group - Collins Aerospace	SS/CPFF	Collins Aerospace : Westford, MA	-	-		-		1.182	Jan 2020	-		1.182	Continuing	Continuing	-
Open Architecture Collaborative Working Group - Harris Corp	SS/CPFF	Harris Corp : Clifton, NJ	-	-		-		1.273	Jan 2020	-		1.273	Continuing	Continuing	-
Open Architecture Collaborative Working Group - Lockheed Martin	SS/CPFF	Lockheed Martin : Fort Worth, TX	-	-		-		7.556	Jan 2020	-		7.556	Continuing	Continuing	-
Open Architecture Collaborative Working Group - Northrop Grumman	SS/CPFF	Northrop Grumman : Melbourne, FL	-	-		-		5.241	Jan 2020	-		5.241	Continuing	Continuing	-
Open Architecture Collaborative Working Group - Raytheon	SS/CPFF	Raytheon : El Segundo, CA	-	-		-		2.037	Jan 2020	-		2.037	Continuing	Continuing	-
Air Force Research Laboratory (AFRL) Science and Technology Initiatives	MIPR	AFRL : Various	-	-		-		1.500	Jan 2020	-		1.500	Continuing	Continuing	-
76th Software Maintenance Group (76 SMXG) Development	MIPR	76 SMXG : Tinker AFB, OK	-	-		-		4.110	Jan 2020	-		4.110	Continuing	Continuing	-

PE 0605056F: Open Architecture Management
Air Force

Exhibit R-3, **RDT&E Project Cost Analysis:** PB 2020 Air Force		**Date:** February 2019
Appropriation/Budget Activity 3600 / 5	**R-1 Program Element (Number/Name)** PE 0605056F / *Open Architecture Management*	**Project (Number/Name)** 656060 / *Standards Management*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Preplanned Product Improvements	C/CPFF	Various : TBD	-	-		-		0.100	Jan 2020	-		0.100	Continuing	Continuing	-
Subtotal			-	-		-		29.940		-		29.940	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Administration	Various	OAM Program Office : Wright-Patterson AFB, OH	-	-		-		0.060	Jan 2020	-		0.060	Continuing	Continuing	-
Subtotal			-	-		-		0.060		-		0.060	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	-	-	0.000	30.000	-	30.000	Continuing	Continuing	N/A

Remarks

 In FY 2019 and prior, this work is being performed in a classified Air Force RDT&E PE.

 Additional details can be provided in appropriate forum.

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Air Force		Date: February 2019
Appropriation/Budget Activity 3600 / 5	**R-1 Program Element (Number/Name)** PE 0605056F / Open Architecture Management	**Project (Number/Name)** 656060 / Standards Management

Develop and Evolve Standards

Activity	Schedule (FY / Quarter)
Quarterly Governance Boards	FY 2019 Q4 – FY 2024 Q4
FY 2020 Annual Release of Open Mission System and Universal Command and Control Interface (OMS/UCI) Standards	FY 2020 Q1
FY 2021 Annual Release of OMS/UCI Standards	FY 2021 Q1
FY 2022 Annual Release of OMS/UCI Standards	FY 2022 Q1
FY 2023 Annual Release of OMS/UCI Standards	FY 2023 Q1
FY 2024 Annual Release of OMS/UCI Standards	FY 2024 Q1
FY 2020 Annual Integration Event	FY 2020 Q3
FY 2021 Annual Integration Event	FY 2021 Q3
FY 2022 Annual Integration Event	FY 2022 Q3
FY 2023 Annual Integration Event	FY 2023 Q3
FY 2024 Annual Integration Event	FY 2024 Q3
FY 2020 Annual Training Day	FY 2020 Q4
FY 2021 Annual Training Day	FY 2021 Q4
FY 2022 Annual Training Day	FY 2022 Q4
FY 2023 Annual Training Day	FY 2023 Q4
FY 2024 Annual Training Day	FY 2024 Q4
Delivery Order 2 Preplanned Product Improvement (P3I) Deliverables	FY 2021 Q1 – Q2

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Air Force		Date: February 2019
Appropriation/Budget Activity 3600 / 5	**R-1 Program Element (Number/Name)** PE 0605056F / *Open Architecture Management*	**Project (Number/Name)** 656060 / *Standards Management*

Schedule Details

Events by Sub Project	Start		End	
	Quarter	**Year**	**Quarter**	**Year**
Develop and Evolve Standards				
Quarterly Governance Boards	1	2020	4	2024
FY 2020 Annual Release of Open Mission System and Universal Command and Control Interface (OMS/UCI) Standards	1	2020	1	2020
FY 2021 Annual Release of OMS/UCI Standards	1	2021	1	2021
FY 2022 Annual Release of OMS/UCI Standards	1	2022	1	2022
FY 2023 Annual Release of OMS/UCI Standards	1	2023	1	2023
FY 2024 Annual Release of OMS/UCI Standards	1	2024	1	2024
FY 2020 Annual Integration Event	3	2020	3	2020
FY 2021 Annual Integration Event	3	2021	3	2021
FY 2022 Annual Integration Event	3	2022	3	2022
FY 2023 Annual Integration Event	3	2023	3	2023
FY 2024 Annual Integration Event	3	2024	3	2024
FY 2020 Annual Training Day	4	2020	4	2020
FY 2021 Annual Training Day	4	2021	4	2021
FY 2022 Annual Training Day	4	2022	4	2022
FY 2023 Annual Training Day	4	2023	4	2023
FY 2024 Annual Training Day	4	2024	4	2024
Delivery Order 2 Preplanned Product Improvement (P3I) Deliverables	2	2021	3	2021

Note

In FY 2019 and prior, this work is being performed in a classified Air Force RDT&E PE.

Additional details can be provided in appropriate forum.