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

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0605056F / <i>Open Architecture Management</i>
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	-	0.000	30.000	30.547	0.000	30.547	31.165	31.781	32.412	33.520	Continuing	Continuing
656060: <i>Standards Management</i>	-	0.000	30.000	30.547	0.000	30.547	31.165	31.781	32.412	33.520	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Open Architecture Management 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 is managing are the Open Mission Systems (OMS) Standard and the Universal Command and Control (C2) Interface (UCI) Standard.

OAMO provides funding to multiple entities, including the Air Force Research Laboratory (AFRL), the 76th Software Maintenance Group (76 SMXG), defense contractors, Federally Funded Research and Development Centers (FFRDCs), and University Affiliated Research Centers in support of standards management activities. AFRL is responsible for executing science and technology initiatives to further develop 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.

Current Preplanned Product Improvements (P3I) include the development, test, and implementation of additional cybersecurity measures or other Standards initiatives including 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. The OAMO will execute P3I initiatives as required.

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 element 0605831F.

The Open Architecture Management Program Element was newly established in 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 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.

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B. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	0.000	30.000	25.000	0.000	25.000
Current President's Budget	0.000	30.000	30.547	0.000	30.547
Total Adjustments	0.000	0.000	5.547	0.000	5.547
• 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	5.547	0.000	5.547

Change Summary Explanation

Increase in FY 2021 of \$5.547 million is to complete the remaining transfer of previously classified open architecture management activities to the Open Architecture Management PE 0605056F.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021
Title: Open Architecture Management Office	0.000	30.000	30.547
Description: Accomplish all industry activities that result in the annual release of the Open Mission Systems / Universal Command and Control Interface (OMS/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 2020 Plans: Modify and update the existing OMS and UCI standards to widen the pool of OMS/UCI applicability, account for emerging technologies, adjust for program specific needs, and conduct targeted training. In coordination with industry partners develop annual releases of the OMS/UCI standards, develop training and implementation materials, and conduct quarterly common governance boards. Provide government expertise to support standards development efforts. Work transition activities for other standards, as required. Develop an annual starter kit, update tool kits, perform testing and integration activities, assist in the generation of an Anti-Tamper (AT) interface control document, and conduct other management and development activities. Ensure development of the standard incorporates cybersecurity considerations. Conduct other Preplanned Product Improvements P3I initiatives, such as specifically targeted improvements to the standards, and coordination with other standardization efforts.			
FY 2021 Plans:			

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021
<p>Continue to modify and update the existing OMS and UCI standards to widen the pool of OMS/UCI applicability, account for emerging technologies, adjust for program specific needs, and conduct targeted training. In coordination with industry partners develop annual releases of the OMS/UCI standards, develop training and implementation materials, and conduct quarterly common governance boards. Provide government expertise to support standards development efforts. Continue working transition activities for other standards, as required. Develop an annual starter kit, update tool kits, perform testing and integration activities, assist in the generation and modification of an Anti-Tamper (AT) interface control document, 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, and coordination with other standardization efforts.</p> <p><i>FY 2020 to FY 2021 Increase/Decrease Statement:</i> FY 2021 increase compared to FY 2020 by \$0.547 million. Funding increased due to Department of Defense inflationary factors and the transfer of remaining open architecture management activities and funding from previous classified PE.</p>			
Accomplishments/Planned Programs Subtotals	0.000	30.000	30.547

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

N/A

Remarks

In FY 2019 and prior, this work was 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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Air Force												Date: February 2020			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)						Project (Number/Name)					
3600 / 5				PE 0605056F / Open Architecture Management						656060 / Standards Management					
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
Open Architecture Collaborative Working Group - BAE Systems	SS/CPFF	BAE Systems : Nashua, NH	-	0.000		1.144	Jan 2020	1.168	Dec 2020	-		1.168	Continuing	Continuing	-
Open Architecture Collaborative Working Group - Boeing	SS/CPFF	Boeing : St. Louis, MO	-	0.000		4.145	Jan 2020	4.299	Dec 2020	-		4.299	Continuing	Continuing	-
Open Architecture Collaborative Working Group - General Atomics ASI	SS/CPFF	General Atomics ASI : Poway, CA	-	0.000		1.088	Jan 2020	1.112	Dec 2020	-		1.112	Continuing	Continuing	-
Open Architecture Collaborative Working Group - Collins Aerospace	SS/CPFF	Collins Aerospace : Westford, MA	-	0.000		1.204	Jan 2020	1.107	Dec 2020	-		1.107	Continuing	Continuing	-
Open Architecture Collaborative Working Group - Harris Corp	SS/CPFF	Harris Corp : Clifton, NJ	-	0.000		1.274	Jan 2020	1.291	Dec 2020	-		1.291	Continuing	Continuing	-
Open Architecture Collaborative Working Group - Lockheed Martin	SS/CPFF	Lockheed Martin : Fort Worth, TX	-	0.000		6.906	Jan 2020	6.890	Dec 2020	-		6.890	Continuing	Continuing	-
Open Architecture Collaborative Working Group - Northrop Grumman	SS/CPFF	Northrop Grumman : Melbourne, FL	-	0.000		5.082	Jan 2020	5.391	Dec 2020	-		5.391	Continuing	Continuing	-
Open Architecture Collaborative Working Group - Raytheon	SS/CPFF	Raytheon : El Segundo, CA	-	0.000		1.923	Jan 2020	1.967	Dec 2020	-		1.967	Continuing	Continuing	-
Air Force Research Laboratory (AFRL) Science and Technology Initiatives	MIPR	AFRL : Various	-	0.000		2.237	Jan 2020	2.363	Dec 2020	-		2.363	Continuing	Continuing	-
76th Software Maintenance Group (76 SMXG) Development	PO	76 SWEG : Tinker AFB, OK	-	0.000		4.013	Jan 2020	4.134	Dec 2020	-		4.134	Continuing	Continuing	-

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Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0605056F / <i>Open Architecture Management</i>	Project (Number/Name) 656060 / <i>Standards Management</i>
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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			
Engineering Support (1)	MIPR	EPAS Contract : TBD	-	0.000		0.371	Jan 2020	0.334	Dec 2020	-		0.334	Continuing	Continuing	-
Engineering Support (2)	MIPR	P3I : TBD	-	0.000		0.337	Jan 2020	0.342	Dec 2020	-		0.342	Continuing	Continuing	-
Engineering Support (3)	MIPR	MIT-LL : TBD	-	0.000		0.064	Jan 2020	0.064	Dec 2020	-		0.064	Continuing	Continuing	-
Subtotal			-	0.000		29.788		30.462		-		30.462	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			
Program Management Administration	Various	OAM Program Office : Wright-Patterson AFB, OH	-	0.000		0.212	Jan 2020	0.085	Dec 2020	-		0.085	Continuing	Continuing	-
Subtotal			-	0.000		0.212		0.085		-		0.085	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			-	0.000	30.000	30.547	-	30.547	Continuing	Continuing	N/A

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

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Air Force		Date: February 2020
Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0605056F / <i>Open Architecture Management</i>	Project (Number/Name) 656060 / <i>Standards Management</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Develop and Evolve Standards</i>				
Quarterly Governance Boards	1	2020	4	2025
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 2025 Annual Release of OMS/UCI Standards	1	2025	1	2025
FY 2020 Annual Integration Event	2	2020	4	2020
FY 2021 Annual Integration Event	2	2021	4	2021
FY 2022 Annual Integration Event	2	2022	4	2022
FY 2023 Annual Integration Event	2	2023	4	2023
FY 2024 Annual Integration Event	2	2024	4	2024
FY 2025 Annual Integration Event	2	2025	4	2025

Note

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

Additional details can be provided in appropriate forum.