Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Air Force											Date: April 2022	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0207521F / *Air Force Calibration Programs*							
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
Total Program Element	-	1.966	1.984	2.123	0.000	2.123	2.167	2.207	2.255	2.305	Continuing	Continuing
673326: *Precision Measurement & Calibration*	-	1.966	1.984	2.123	0.000	2.123	2.167	2.207	2.255	2.305	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This program develops, tests, and evaluates national and Air Force measurement standards (hardware) and calibration equipment in support of all Air Force programs and activities, including Precision Measurement Equipment Laboratories (PMELs) worldwide. Metrology research and development provides technology to support systems in all phases of development and acquisition, as well as Air Force R&D laboratories, test ranges, ground test facilities, and operational weapons systems support. Rapidly changing technology requires continuing research and development of measurement standards and calibration equipment to ensure modern weapon systems meet Air Force readiness objectives. This program addresses all metrology disciplines and includes the technology areas of laser, infrared, microwave, millimeter wave, optical, physical, mechanical, electrical, electronic, and ionizing radiation measurements. Metrology is a technical discipline devoted to the science of measurements and to the study and improvement of measurement technology. Measurements are the foundation of military system development, quality assurance, hardware conformance testing and system readiness tests. The integrity of these tests is assured through calibration and traceability assurance schemes.

The capability to measure and calibrate must parallel the emergence of new technology, new ranges, and new capabilities of military systems. Lack of new measurement capability impedes or blocks the successful exploitation of new technologies, especially in the movement from development laboratory to production to deployment. R&D efforts are essential within the DoD to pace these requirements, otherwise, these same new systems will suffer time delays, excessive cost, and increased risk due to unreliable test results in all phases of development, production, deployment and operation.

This program element may include necessary civilian pay expenses required to manage, execute and deliver 0207521F. 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. In PY 0M was expended for civilian pay expenses in the program element and in CY 0M is forecasted for civilian pay expenses in this program element.

Program is managed by Air Force Materiel Command, Agile Combat Support Directorate, Air Force Metrology Division (WNM).

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.

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B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	1.966	1.984	0.000	0.000	0.000
Current President's Budget	1.966	1.984	2.123	0.000	2.123
Total Adjustments	0.000	0.000	2.123	0.000	2.123
• 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	2.123	0.000	2.123

C. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Weapons System Measurement Standards	0.368	0.352	0.439
Description: Develop national measurement standards to support Air Force infared / laser / electro-optical weapon systems and support equipment. ***FY 2022 Plans:*** Continue development of national measurement standards to support Air Force infared / laser / electro-optical weapon systems and support equipment. ***FY 2023 Plans:*** Continue development of national measurement standards to support Air Force infared / laser / electro-optical weapon systems and support equipment. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Additional funding for development of NIST on a Chip technology for self calibrating equipment.			
Title: Electrical Measurements	0.395	0.405	0.425
Description: Develop Standards for electrical measurements to support high accuracy electronic test equipment. ***FY 2022 Plans:*** Continue development of standards for electrical measurements to support high accuracy electronic test equipment. ***FY 2023 Plans:***			

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C. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Continue development of standards for electrical measurements to support high accuracy electronic test equipment. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Inflation			
Title: Calibration Standards ***Description:*** Develop improved calibration standards to support physical, mechanical, and electro-mechanical support equipment. ***FY 2022 Plans:*** Continue to develop improved calibration standards to support physical, mechanical, and electro-mechanical support equipment. ***FY 2023 Plans:*** Continue to develop improved calibration standards to support physical, mechanical, and electro-mechanical support equipment. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Inflation	0.639	0.649	0.681
Title: Radar Support/Communications ***Description:*** Develop standards for radar support, RF communication, and radar cross section range measurements. ***FY 2022 Plans:*** Continue to develop standards for radar support, RF communication, and radar cross section range measurements. ***FY 2023 Plans:*** Continue to develop standards for radar support, RF communication, and radar cross section range measurements.	0.564	0.578	0.578
Accomplishments/Planned Programs Subtotals	1.966	1.984	2.123

D. Other Program Funding Summary ($ in Millions)

N/A

Remarks

E. Acquisition Strategy

Primarily accomplished through intergovernmental transfer between the Department of Defense and other Federal Departments.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Air Force			Date: April 2022
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207521F / *Air Force Calibration Programs*	Project (Number/Name) 673326 / *Precision Measurement & Calibration*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
National Institute of Standards and Technology	MIPR	AFMETCAL : Heath, OH	-	1.289	Oct 2021	1.465	Oct 2022	1.563	Oct 2022	-		1.563	Continuing	Continuing	-
Department of Defense	MIPR	AFMETCAL : Heath, OH	-	0.043	Oct 2021	0.040	Oct 2022	0.050	Oct 2022	-		0.050	Continuing	Continuing	-
Industry	Various	AFMETCAL : Heath, OH	-	0.634	Oct 2021	0.479	Oct 2022	0.510	Oct 2022	-		0.510	Continuing	Continuing	-
		Subtotal	-	1.966		1.984		2.123		-		2.123	Continuing	Continuing	N/A

	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	1.966		1.984		2.123		-		2.123	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207521F / *Air Force Calibration Programs*	**Project (Number/Name)** 673326 / *Precision Measurement & Calibration*

	FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027			
	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
Precision Measurement & Calibration																												
Precision Measurement & Calibration																												

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207521F / *Air Force Calibration Programs*	**Project (Number/Name)** 673326 / *Precision Measurement & Calibration*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Precision Measurement & Calibration				
Precision Measurement & Calibration	1	2021	4	2026