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Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Air Force										Date: May 2017		
Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development					R-1 Program Element (Number/Name) PE 0702207F I Depot Maintenance (Non-IF)							
COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
Total Program Element	-	1.514	1.518	1.528	0.000	1.528	1.499	1.527	1.553	1.585	Continuing	Continuing
673326: Precision Measurement & Calibration	-	1.514	1.518	1.528	0.000	1.528	1.499	1.527	1.553	1.585	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.

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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total		
Previous President's Budget		1.525	1.518	1.523	0.000	1.523		
Current President's Budget		1.514	1.518	1.528	0.000	1.528		
Total Adjustments		-0.011	0.000	0.005	0.000	0.005		
• 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		-0.011	0.000	0.005	0.000	0.005		
C. Accomplishments/Planned Programs (\$ in Millions)				FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: Weapons Systems Measurement Standards				0.565	0.558	0.568	0.000	0.568
Description: Continue development of national measurement standards to support Air Force infrared / laser / electro-optical weapon systems and support equipment.								
FY 2016 Accomplishments: Project development continues on infrared/laser/electro-optical weapon system support.								
FY 2017 Plans: Will continue project development on infrared/laser/electro-optical weapon system support.								
FY 2018 Base Plans: Project development continues on infrared/laser/electro-optical weapons system support.								
FY 2018 OCO Plans: N/A								
Title: Electrical Measurements				0.000	0.000	0.000	0.000	0.000
Description: Continue development of standards for electrical measurements to support high accuracy electronic test equipment.								
FY 2016 Accomplishments:								

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
N/A FY 2017 Plans: N/A FY 2018 Base Plans: N/A FY 2018 OCO Plans: N/A						
Title: Radar Support/Communications Description: Continue development of standards for radar support, RF communication systems, and radar cross section range measurements. FY 2016 Accomplishments: Development of radar support standards, RF communication systems and radar cross section range will continue through development process. FY 2017 Plans: Development of radar support standards, RF communication systems and radar cross section range will continue through development process. FY 2018 Base Plans: Development of radar support standards, RF communication systems and radar cross section range will continue through development process.		0.300	0.300	0.300	-	0.300
Title: Calibration Description: Continue the development of improved calibration standards to support physical, mechanical, and electro-mechanical support equipment. FY 2016 Accomplishments: Calibration standards which support physical, mechanical and electro-mechanical support equipment will continue to be developed to meet ever changing technology. FY 2017 Plans:		0.549	0.560	0.560	0.000	0.560

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C. Accomplishments/Planned Programs (\$ in Millions)					
	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Calibration standards which support physical, mechanical and electro-mechanical support equipment will continue to be developed to meet ever changing technology. FY 2018 Base Plans: Calibration standards which support physical, mechanical and electro-mechanical support equipment will continue to be developed to meet ever changing technology. FY 2018 OCO Plans: N/A					
Title: Analytical Metrology Description: Continue development of standards, models, and procedures to support analytical metrology applications. FY 2016 Accomplishments: Projects will continue in development phase to meet changing technology. FY 2017 Plans: Projects will continue in development phase to meet changing technology. FY 2018 Base Plans: Continue development of standards, models, and procedures to support analytical metrology applications.	0.100	0.100	0.100	-	0.100
Accomplishments/Planned Programs Subtotals	1.514	1.518	1.528	0.000	1.528
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.					
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.					