

## UNCLASSIFIED

## RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 2003

BUDGET ACTIVITY

07 - Operational System Development

PE NUMBER AND TITLE

0702207F Depot Maintenance (Non-IF)

PROJECT

3326

COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
3326 Precision Measurement & Calibration	2,595	2,296	1,406	1,435	1,404	1,426	1,447	1,467	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

(U) **A. Mission Description**

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.

(U) **FY 2002 (\$ in Thousands)**

- (U) \$1,165 Complete the target simulator radiometer; and the domain engineered pyroelectric detector projects; and continue development of national measurement standards to support Air Force infrared / laser / electro-optical weapon systems and support equipment.
- (U) \$620 Continue development of standards for radar support, RF communication systems, and radar cross-section range measurements.
- (U) \$120 Continue the low gas flow MAP; and continue the development of improved calibration standards to support physical, mechanical and electro-mechanical support equipment.
- (U) \$380 Complete the next generation sampling comparator probe project; and continue development of standards for electrical measurements to support high accuracy electronic test equipment.
- (U) \$75 Complete the low level dosimetry traceability project and large area beta source projects and continue development of nation standards for calibration of ionizing radiation hazard instrumentation.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE <b>February 2003</b>
BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0702207F Depot Maintenance (Non-IF)</b>	PROJECT <b>3326</b>
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <b><u>FY 2002 (\$ in Thousands) Continued</u></b></p> <p>(U) \$235 Continue development of improved standards and procedures to support hydrazine detector calibrations.</p> <p>(U) \$2,595 Total</p> <p>(U) <b><u>FY 2003 (\$ in Thousands)</u></b></p> <p>(U) \$950 Complete the spectral radiance/irradiance measurement capability and the angle/temperature dependence of emittance projects; and continue development of national measurement standards to support Air Force infrared / laser / electro-optical weapon systems and support equipment.</p> <p>(U) \$400 Complete the improved thin film multijunction thermal converter project, the enhanced wideband oscilloscope characterization, the sampling system for improved wideband measurements, the AC voltage detector project and the calibration support for multi-frequency capacitance bridge project. Continue development of standards for electrical measurements to support high accuracy electronic test equipment.</p> <p>(U) \$556 Complete the co-conical field generation system and continue development of standards for radar support, RF communication systems, and radar cross section range measurements.</p> <p>(U) \$240 Complete gas flow measurement assurance program (MAP); and continue the development of improved calibration standards to support physical, mechanical and electro-mechanical support equipment.</p> <p>(U) \$150 Continue the development of improved standards and procedures to support hydrazine detector calibrations.</p> <p>(U) \$2,296 Total</p> <p>(U) <b><u>FY 2004 (\$ in Thousands)</u></b></p> <p>(U) \$405 Continue development of standards for radar support, RF communication systems, and radar cross-section range measurements.</p> <p>(U) \$100 Complete the wind tunnel characterization project; and continue the development of improved calibration standards to support physical, mechanical and electro-mechanical support equipment.</p> <p>(U) \$325 Continue development of standards for electrical measurements to support high accuracy electronic test equipment.</p> <p>(U) \$60 Complete development of improved standards and procedures to support hydrazine detector calibrations.</p> <p>(U) \$516 Continue development of national measurement standards to support Air Force infrared/laser/electro-optical weapon systems and support equipment.</p> <p>(U) \$1,406 Total</p> <p>(U) <b><u>B. Budget Activity Justification</u></b></p> <p style="padding-left: 20px;">This program is in budget activity 7 - Operational System Development because it supports operational systems.</p>		
<div style="display: flex; justify-content: space-between;"> <span>Project 3326</span> <span>Page 2 of 5 Pages</span> <span>Exhibit R-2 (PE 0702207F)</span> </div>		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2003		
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0702207F Depot Maintenance (Non-IF)</b>			PROJECT <b>3326</b>		
(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b>				<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
				<u>Total Cost</u>					
(U) Previous President's Budget				1,533		1,569		1,406	
(U) Appropriated Value				1,533		1,569			
(U) Adjustments to Appropriated Value									
a. Congressional/General Reductions				-138					
b. Small Business Innovative Research									
c. Omnibus or Other Above Threshold Reprogram									
d. Below Threshold Reprogram									
e. Rescissions									
(U) Adjustments to Budget Years Since FY 2003 PBR				1,200		727			
(U) Current Budget Submit/FY 2004 PBR				2,595		2,296		1,406	
								TBD	
(U) <b><u>Significant Program Changes:</u></b>									
The additional funding in FY03 is to expedite the completion of several metrology projects such as develop: hydrazine detector calibration methods; methods to characterize bench top wind tunnels, and artifacts and procedures necessary to characterize radar cross section ranges such as the Holloman AFB NRTF facility. The funding will also be used to begin projects such as developing improved methods to more accurately calibrate infrared target simulators, developing standards supporting advanced chem/bio warfare measurements.									
(U) <b><u>D. Other Program Funding Summary (\$ in Thousands)</u></b>									
				<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
				<u>Actual</u>		<u>Estimate</u>		<u>Estimate</u>	
				<u>Estimate</u>		<u>Estimate</u>		<u>Estimate</u>	
				<u>Estimate</u>		<u>Estimate</u>		<u>Estimate</u>	
				<u>Estimate</u>		<u>Estimate</u>		<u>Estimate</u>	
				<u>Estimate</u>		<u>Estimate</u>		<u>Estimate</u>	
				<u>Estimate</u>		<u>Estimate</u>		<u>Estimate</u>	
				<u>Estimate</u>		<u>Estimate</u>		<u>Estimate</u>	
(U) AF RDT&E									
(U) Other APPN									
(U) <b><u>E. Acquisition Strategy</u></b>									
Primarily accomplish through intergovernmental transfer between the Department of Defense and other Federal Departments.									
(U) <b><u>F. Schedule Profile</u></b>									
				<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
				1 2 3 4		1 2 3 4		1 2 3 4	
(U) N/A									
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
<b>07 - Operational System Development</b>					<b>0702207F Depot Maintenance (Non-IF)</b>			<b>3326</b>		
(U) <b><u>A. Project Cost Breakdown (\$ in Thousands)</u></b>										
						<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>		
(U)	Quality Assurance (Develop Measurement Standards & Calibration Support)					2,578	2,276		1,386	
(U)	Travel					17	20		20	
(U)	Total					2,595	2,296		1,406	
(U) <b><u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u></b>										
(U) <b><u>Performing Organizations:</u></b>										
	<u>Contractor or</u>	<u>Contract</u>								
	<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>					
	<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
	<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>
	<u>Product Development Organizations</u>									
	National Institute of	MIPR (DD	Varies	TBD	TBD	18,547	2,297	2,141	1,226	Continuing
	Standards & Technology	FORM 448)								
	Department of Energy	MIPR (DD	Varies	TBD	TBD	229	281	135	160	Continuing
		FORM 448)								
	AFMC	In House	Varies	TBD	TBD	195	17	20	20	Continuing
	<u>Support and Management Organizations</u>									
	<u>Test and Evaluation Organizations</u>									
(U) <b><u>Government Furnished Property:</u></b>										
		<u>Contract</u>								
		<u>Method/Type</u>	<u>Award or</u>							
	<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
	<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>		<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>
	<u>Product Development Property</u>									
	<u>Support and Management Property</u>									
	<u>Test and Evaluation Property</u>									
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE February 2003	
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
07 - Operational System Development		0702207F Depot Maintenance (Non-IF)			3326	
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>
<u>Subtotals</u>						<u>Total</u>
Subtotal Product Development		18,971	2,595	2,296	1,406	TBD
Subtotal Support and Management						TBD
Subtotal Test and Evaluation						TBD
Total Project		18,971	2,595	2,296	1,406	TBD

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