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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				PE 0702207F: <i>Depot Maintenance (Non-IF)</i>							
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	1.456	1.514	1.531	-	1.531	1.580	1.605	1.628	1.656	Continuing	Continuing
673326: <i>Precision Measurement & Calibration</i>	1.456	1.514	1.531	-	1.531	1.580	1.605	1.628	1.656	Continuing	Continuing

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 is in budget activity 7 - Operational System Development because it supports operational systems.

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	1.456	1.514	1.536	-	1.536
Current President's Budget	1.456	1.514	1.531	-	1.531
Total Adjustments	-	-	-0.005	-	-0.005
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-0.005	-	-0.005

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force									DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development				R-1 ITEM NOMENCLATURE PE 0702207F: Depot Maintenance (Non-IF)				PROJECT 673326: Precision Measurement & Calibration			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
673326: Precision Measurement & Calibration	1.456	1.514	1.531	-	1.531	1.580	1.605	1.628	1.656	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

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 is in budget activity 7 - Operational System Development because it supports operational systems.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Weapons Systems Measurement Standards	0.526	0.549	0.544	-	0.544
Description: Continue development of national measurement standards to support Air Force infrared / laser / electro-optical weapon systems and support equipment.					
FY 2010 Accomplishments: Continuation of above listed activities					
FY 2011 Plans: Continuation of above listed activities					
FY 2012 Base Plans:					

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APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development	R-1 ITEM NOMENCLATURE PE 0702207F: Depot Maintenance (Non-IF)	PROJECT 673326: Precision Measurement & Calibration				
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Continuation of above listed activities FY 2012 OCO Plans: Not applicable						
Title: Electrical Measurements Description: Continue development of standards for electrical measurements to support high accuracy electronic test equipment. FY 2010 Accomplishments: Continuation of above listed activities FY 2011 Plans: Continuation of above listed activities FY 2012 Base Plans: Continuation of above listed activities FY 2012 OCO Plans: Not applicable		0.145	0.185	0.185	-	0.185
Title: Radar Support/Communications Description: Continue development of standards for radar support, RF communication systems, and radar cross section range measurements. FY 2010 Accomplishments: Continuation of above listed activities FY 2011 Plans: Continuation of above listed activities FY 2012 Base Plans: Continuation of above listed activities FY 2012 OCO Plans: Not applicable		0.140	0.155	0.155	-	0.155
Title: Calibration		0.365	0.320	0.320	-	0.320

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Description: Continue the development of improved calibration standards to support physical, mechanical and electro-mechanical support equipment. FY 2010 Accomplishments: Continuation of above listed activities FY 2011 Plans: Continuation of above listed activities FY 2012 Base Plans: Continuation of above listed activities FY 2012 OCO Plans: Not applicable						
Title: Radiation Hazard Description: Continue the development of national standards for calibration of ionizing radiation hazard instrumentation. FY 2010 Accomplishments: Continuation of above listed activities FY 2011 Plans: Continuation of above listed activities FY 2012 Base Plans: Continuation of above listed activities FY 2012 OCO Plans: Not applicable		0.045	0.045	0.045	-	0.045
Title: Chemical/Biological Measurements Description: Continue development of improved standards and procedures to support chemical/biological measurements FY 2010 Accomplishments:		0.145	0.160	0.160	-	0.160

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B. Accomplishments/Planned Programs (\$ in Millions)												
				FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total				
Continuation of above listed activities												
FY 2011 Plans: Continuation of above listed activities												
FY 2012 Base Plans: Continuation of above listed activities												
FY 2012 OCO Plans: Not applicable												
Title: Analytical Metrology				0.090	0.100	0.122	-	0.122				
Description: Continue development of standards, models and procedures to support analytical metrology applications												
FY 2010 Accomplishments: Continuation of above listed activities												
FY 2011 Plans: Continuation of above listed activities												
FY 2012 Base Plans: Continuation of above listed activities												
FY 2012 OCO Plans: Not applicable												
Accomplishments/Planned Programs Subtotals				1.456	1.514	1.531	-	1.531				
C. Other Program Funding Summary (\$ in Millions)												
	Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
•	N/A:	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
D. Acquisition Strategy												
Primarily accomplish through intergovernmental transfer between the Department of Defense and other Federal Departments.												

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E. 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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force										DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development				R-1 ITEM NOMENCLATURE PE 0702207F: Depot Maintenance (Non-IF)				PROJECT 673326: Precision Measurement & Calibration					
Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
National Institute of Standards & Technology	MIPR	TBD:TBD,	1.215	1.435		1.430		-		1.430	Continuing	Continuing	TBD
Department of Energy	MIPR	TBD:TBD,	0.056	-		0.022		-		0.022	Continuing	Continuing	TBD
DoD Army	MIPR	TBD:TBD,	0.040	-		-		-		-	Continuing	Continuing	TBD
AFMC	TBD	TBD:TBD,	0.020	0.079		0.079		-		0.079	Continuing	Continuing	TBD
AFMC (AEDC)	MIPR	TBD:TBD	0.125	-		-		-		-	0.000	0.125	0.000
Contract	TBD	TBD:TBD	-	-		-		-		-	Continuing	Continuing	TBD
Subtotal			1.456	1.514		1.531		-		1.531			
Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000
Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000
Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force							DATE: February 2011		
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	Total Prior Years Cost	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals	1.456	1.514	1.531	-	1.531				
Remarks									

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force			DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE		PROJECT	
3600: Research, Development, Test & Evaluation, Air Force		PE 0702207F: Depot Maintenance (Non-IF)		673326: Precision Measurement & Calibration	
BA 7: Operational Systems Development					

	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
	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
A schedule for Depot Maintenance PE is Not Applicable due to the nature of this project.	<div></div>																											

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force			DATE: February 2011
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
A schedule for Depot Maintenance PE is Not Applicable due to the nature of this project.	1	2012	4	2012