**R-1 ITEM NOMENCLATURE** 

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY

2040: Research, Development, Test & Evaluation, Army

PE 0605602A: Army Technical Test Instrumentation and Targets

BA 6: RDT&E Management Support

71											
COST (\$ in Millions)			FY 2012	FY 2012	FY 2012					Cost To	
COST (\$ III WIIIIOHS)	FY 2010	FY 2011	Base	oco	Total	FY 2013	FY 2014	FY 2015	FY 2016	Complete	Total Cost
Total Program Element	82.054	59.040	70.227	-	70.227	68.506	63.861	62.092	64.574	Continuing	Continuing
628: Developmental Test Technology & Sustainment	53.105	37.024	47.051	-	47.051	45.075	44.271	42.667	46.226	Continuing	Continuing
62C: MODELING AND SIMULATION INSTRUMENTATION	28.949	22.016	23.176	-	23.176	23.431	19.590	19.425	18.348	Continuing	Continuing

#### Note

Technical Correction \$5000 S&T BOS ADJ \$5000 Hard Body Armor Testing \$1075 RMD 700A3 TF Inititiatives -\$504 RMD 702 NON Fuel Price/NON Pay Inf -\$149

#### A. Mission Description and Budget Item Justification

Effective FY09, 62B and 62C were combined into one line - 62C to accurately reflect the interwoven use of both Modeling and Simulation (M&S) and instrumentation in support of operational and developmental testing.

This Program Element provides critical front-end investments for development of new test methodologies; test standards; advanced test technology concepts for long range requirements; future test capabilities; advanced development of M&S and instrumentation prototypes; and the full development of systems for the United States Army Test and Evaluation Command (ATEC), which includes the Developmental Test Command (DTC) at Aberdeen Proving Ground, Maryland and the Operational Test Command (OTC) at Ft Hood, Texas. DTC consists of seven Test Centers: Aberdeen Test Center (ATC), Aberdeen Proving Ground, Maryland; White Sands Test Center (WSTC) at White Sands Missile Range (WSMR), New Mexico; Electronic Proving Ground (EPG), Fort Huachuca, Arizona; Yuma Test Center (YTC) at Yuma Proving Grounds (YPG), Arizona (including the Cold Regions Test Center (CRTC), Fort Greely, Alaska and the Tropics Regions Test Center (TRTC), at various locations); Redstone Test Center (RTC), Redstone Arsenal and FT Rucker, Alabama; and West Desert Test Center (WDTC) at Dugway Proving Ground (DPG), Utah. OTC consists of four forward Test Directorates (Airborne Special Operations Test Directorate, Fort Bragg, North Carolina; Air Defense Artillery Test Directorate, Fort Bliss, Texas; Fire Support Test Directorate, Fort Sill, Oklahoma; and Intelligence Electronic Warfare Test Directorate, Fort Huachuca, Arizona) together with five other Test Directorates (Aviation; Maneuver; Battle Command and Computers; Engineer and Combat Support; and Future Force) at Ft Hood. Texas. These capabilities support the development and fielding cycle of all Army acquisition programs including rapid fielding initiatives in support of operations in Iraq and Afghanistan. Sustainment funding maintains existing testing capabilities at both DTC and OTC by replacing unreliable, uneconomical, and irreparable instrumentation, as well as incremental upgrades of hardware and software for M&S and instrumentation systems to assure adequate test data collection capabilities. This data supports acquisition milestone decisions for all commodity areas throughout the Army including programs such as the Mine Resistant Ambush Protected (MRAP) vehicles, Ground Combat Vehicle (GCV), Brigade Combat Team Moderniation (BCT-M), Terminal High Altitude Area Defense (THAAD), Patriot Advance Capability Phase 3 (PAC 3), Mobile Gun System (MGS), Warfighter Information Network - Tactical (WIN-T), Joint Tactical Radio System (JTRS), and the Army Battle

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army		DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE			
2040: Research, Development, Test & Evaluation, Army	PE 0605602A: Army Technical Test Instrumentation and Targets			
BA 6: RDT&E Management Support				

Command System (ABCS) which includes Force XXI Battle Command Brigade and Below (FBCB2)/Blue Force Tracking (BFT). This Program Element develops and sustains developmental and operational test capabilities that provide key support to the Army's Transformation. In addition this Program Element supports Oversease Contingency Operations by providing instrumentation to support ATEC's 24/7 mission at YTC, Arizona, WSMR, New Mexico and ATC, Maryland supporting the Joint Improvised Explosive Device Defeat Organization (JIEDDO) - as well as efforts throughout ATEC in support of the Army's Rapid Equipping the Force (REF) initiative.

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	<b>FY 2012 OCO</b>	FY 2012 Total
Previous President's Budget	84.389	59.040	60.426	-	60.426
Current President's Budget	82.054	59.040	70.227	-	70.227
Total Adjustments	-2.335	-	9.801	-	9.801
<ul> <li>Congressional General Reductions</li> </ul>		-			
<ul> <li>Congressional Directed Reductions</li> </ul>		-			
<ul> <li>Congressional Rescissions</li> </ul>	-	-			
<ul> <li>Congressional Adds</li> </ul>		-			
<ul> <li>Congressional Directed Transfers</li> </ul>		-			
<ul> <li>Reprogrammings</li> </ul>	-	-			
SBIR/STTR Transfer	-2.335	-			
<ul> <li>Adjustments to Budget Years</li> </ul>	-	-	9.801	-	9.801

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Army							DATE: Febr	ruary 2011			
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 6: RDT&E Management Support			PE 0605602A: Army Technical Test				PROJECT 628: Developmental Test Technology & Sustainment				
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
628: Developmental Test Technology & Sustainment	53.105	37.024	47.051	-	47.051	45.075	44.271	42.667	46.226	Continuing	Continuing
Quantity of RDT&E Articles											

#### A. Mission Description and Budget Item Justification

This program provides critical front-end investments for development of new test methodologies, test standards, advanced test technology concepts for long range requirements, future test capabilities, and advanced instrumentation prototypes for the United States Army Developmental Test Command (DTC), a subordinate command of the Army Test and Evaluation Command (ATEC), which includes: Aberdeen Test Center (ATC), Aberdeen Proving Ground, Maryland; White Sands Test Center (WSTC) at White Sands Missile Range (WSMR), New Mexico; Electronic Proving Ground (EPG), Fort Huachuca, Arizona; Yuma Test Center (YTC) at Yuma Proving Ground (YPG), Arizona (including the Cold Regions Test Center (CRTC), Fort Greely, Alaska and the Tropic Regions Test Center (TRTC), (at various locations); Redstone Test Center (RTC), Redstone Arsenal and Ft Rucker, Alabama; and West Desert Test Center (WDTC) Dugway Proving Ground (DPG), Utah. These capabilities are required to support developmental testing requirements of high priority Army systems being rapidly fielded to Iraq and Afghanistan, and those systems supporting Army modernization efforts.

A key element is sustaining aging instrumentation which maintains existing capabilities at test facilities by replacing unreliable, uneconomical and irreparable instrumentation, as well as incremental upgrades of instrumentation and software, reducing their average age to assure adequate testing capabilities. This project develops and sustains developmental test instrumentation and capabilities that provide the data necessary to support acquisition milestone decisions for all commodity areas throughout the Army. Significant examples include new instrumentation for the testing of body armor and other soldier protective equipment, advanced methods for testing the survivability of ground vehicles and aircraft, refurbishment of kineto-tracking mounts (precise optical instruments used in missile and aviation testing), and an expanded instrumentation suite in support of the growing mission to test Command, Control, Communication and Computer (C4) systems

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: Program Management	5.226	4.957	5.952
Articles:	0	0	
<b>Description:</b> Provides command-level oversight, management and technical support for the DTC test technology and instrumentation investment accounts. Provides support to ATEC Capstone efforts in coordinating development of common instrumentation and technology needs for developmental and operational testing. Provides management and support costs for direct interface with the T&E Executive Agent, management of needs and solutions calls for T&E Reliance oversight, management of the Small Business Innovation Research (SBIR), and support of the Army principal of the Test Resource Advisory Group (TRAG).			
FY 2010 Accomplishments:			

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Army	xhibit R-2A, RDT&E Project Justification: PB 2012 Army							
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army	R-1 ITEM NOMENCLATURE PE 0605602A: Army Technical Test	PROJEC 628: Dev	ROJECT 28: Developmental Test Technology &					
BA 6: RDT&E Management Support					Sustainment			
B. Accomplishments/Planned Programs (\$ in Millions, Article	e Quantities in Each <u>)</u>		FY 2010	FY 2011	FY 2012			
Continuation of the existing requirement for the development of developmental and operational testing. Management of the Sma principal of the Test Resource Advisory Group (TRAG).								
FY 2011 Plans: Continuation of the existing requirement for the development of developmental and operational testing. Management of the Sma principal of the Test Resource Advisory Group (TRAG).								
FY 2012 Plans: Continuation of the existing requirement for the development of developmental and operational testing. Management of the Sma principal of the Test Resource Advisory Group (TRAG).	• • • • • • • • • • • • • • • • • • • •							
Title: Developmental Test Technology Investment		Articles:	36.281 0	28.815 0	36.85			
<b>Description:</b> Develops, acquires and sustains critical test technolinstrumentation, computer and communications systems, data of capabilities to successfully develop and test the Army weapons a constructive environment, hardware-in-the-loop capabilities and a Acquires instrumentation for reliability, availability and maintainal ballistic transducers for measuring chamber pressures during an instrumentation used in testing across all test commodity areas; on ground and air systems; continues replacement and upgrade equipment used in missile testing; acquires data recorders, signal instrumentation for various aircraft tests; upgrades natural environmentation, munitions and support equipment in extreme hot desert upgrade of survivability/vulnerability test capabilities in support of mobile range communications equipment and digital end devices for testing next generation material such as advanced armor profuggrades Kineto Tracking Mounts at YPG.	collection, analysis and reporting equipment and other and equipment. Provides the necessary live, virtual models and simulations needed for testing the Army bility (RAM) data collection on tracked and wheeled munition tests; supports development of common cacquires instrumentation for electromagnetic enviror of range control instrumentation, radar, optics and all conditioning equipment, data processing equipments test instrumentation used for testing weapont tenvironments as well as extreme cold conditions; of live fire and active protection systems; upgrades as; and develops advanced test technologies and instruments.	er test and y materiel. vehicles; data collection ment effects telemetry ent and other on systems, continues and replaces trumentation						
FY 2010 Accomplishments:								

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: Fe	bruary 2011	
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 6: RDT&E Management Support	R-1 ITEM NOMENCLATURE PE 0605602A: Army Technical Test Instrumentation and Targets	PROJEC 628: Dev Sustainn	Developmental Test Technology &		
B. Accomplishments/Planned Programs (\$ in Millions, Article	Quantities in Each)		FY 2010	FY 2011	FY 2012
Continue to provide, acquire and upgrade instrumentation for RAM areas and support the test capability of live fire protection systems		st commodity			
FY 2011 Plans: Continue to provide, acquire and upgrade instrumentation for RAN areas and support the test capability of live fire protection systems		st commodity			
FY 2012 Plans: Continue to provide, acquire and upgrade instrumentation for RAM areas and support the test capability of live fire protection systems		st commodity			
Title: Automotive Technology Evaluation Facility		Articles:	-	2.600 0	3.000
<b>Description:</b> Automotive Technology Evaluation Facility (ATEF) Installed to monitor vehicle positions on the course and control acrequired for range safety and automatic collision avoidance while dynamics and stability, robotic/autonomous vehicle control and tra	cesses to and from the facility. Continuous vehicle simultaneously conducting sustained speed endur	monitoring is			
FY 2011 Plans:  Maintain automated traffic control system and continue monitoring	g range safety while conducting simultaneous vehic	cle testing.			
FY 2012 Plans: Maintain automated traffic control system and continue monitoring	g range safety while conducting simultaneous vehic	cle testing.			
<b>Title:</b> Army Test and Evaluation Command (ATEC) Common Test and Evaluation	t Technology for Developmental Testing, Operation	nal Testing,  Articles:	0.638 0	0.652	1.246
<b>Description:</b> Army Test and Evaluation Command (ATEC) Command Testing, and Evaluation. Provides support for development of the Digital Library to enable a centrally accessible repository for test of Architecture to facilitate use of common tools and standards; suppostrumentation, Modeling and Simulation, Threats, Data Manage Regulation 70-15	Versatile Information System Integrated, On-line (\) lata; development of a Test and Evaluation Enterport for critical Test Technology Domain Focus Are	VISION) rise as of			
FY 2010 Accomplishments:					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: Fel	oruary 2011	
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 6: RDT&E Management Support	PE 0605602A: Army Technical Test	PROJECT 628: Developmental Test Technology & Sustainment			ду &
B. Accomplishments/Planned Programs (\$ in Millions, Artic	le Quantities in Each)		FY 2010	FY 2011	FY 2012
Continue to provide support for development of the VISION digital facilitate use of common tools and standards. Continue to support modeling and simulation, threats, data management and Netwo	ort critical test technology domain focus areas of instrumen				
FY 2011 Plans: Continue to provide support for development of the VISION digit facilitate use of common tools and standards. Continue to support modeling and simulation, threats, data management and Network	ort critical test technology domain focus areas of instrumen				
FY 2012 Plans: Continue to provide support for development of the VISION digit facilitate use of common tools and standards. Continue to support modeling and simulation, threats, data management and Network	ort critical test technology domain focus areas of instrumen				
Title: Congressional Add		Articles:	10.960 0	-	
<b>Description:</b> Funding is provided for the following effort					
FY 2010 Accomplishments:  WSMR \$1.6M Define Renewable Energy Sources for Base Ene energy generation and storage considering Solar, Small Nuclear WSMR \$3.76 Phase II, Regional Partnership - Ft Bliss, WSMR, real-time test and training missions at the White Sands Missile F coordinate use of regional assets such as air space, land usage Improvements will upgrade field testing capabilities to monitor at their deposition on surfaces. DPG \$2.0M Multiple Source Data rapidly evolving CB aerosol threats including development of a recombining data from referee instrumentation with simulations and	r Power plants, geothermal and DoE power storage conception Holloman develops tools to schedule, deconflict and coord Range, Ft. Bliss and Holloman Air Force Base. These tools and radio/radar frequencies. DPG \$3.6M Dugway Field and analyze chemical aerosol simulant releases in the air are Fusion for Dugway PG improves the capability to address new standoff referee instrumentation and data fusion methology.	ots. inate s will Fest nd the			
	Accomplishments/Planned Programs So	ubtotals	53.105	37.024	47.0

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		<b>DATE:</b> February 2011
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
2040: Research, Development, Test & Evaluation, Army	PE 0605602A: Army Technical Test	628: Developmental Test Technology &
BA 6: RDT&E Management Support	Instrumentation and Targets	Sustainment

## C. Other Program Funding Summary (\$ in Millions)

N/A

# D. Acquisition Strategy

N/A

## **E. Performance Metrics**

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Army								DATE: Febr	uary 2011		
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 6: RDT&E Management Support				PE 0605602A: Army Technical Test				PROJECT 62C: MODELING AND SIMULATION INSTRUMENTATION			
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
62C: MODELING AND SIMULATION INSTRUMENTATION	28.949	22.016	23.176	-	23.176	23.431	19.590	19.425	18.348	Continuing	Continuing
Quantity of RDT&E Articles											

## A. Mission Description and Budget Item Justification

The United States Army Operational Test Command (USAOTC) plans, conducts and reports on operational tests, assessments and experiments in order to provide essential information for the acquisition and fielding of Warfighting systems. Operational Test (OT) Instrumentation collects required data from both the systems being tested and the surrounding activity. OT Simulation enhances the live forces conducting operational testing by simulating additional units, message traffic, effects, and terrain. The Army?s OPTEMPO has reduced the number of tactical units and vehicles available to support OT, making augmentation through simulation necessary to test in a realistic, operational environment. PEO STRI PM ITTS provides development of major simulation and instrumentation systems while USAOTC adapts systems from other organizations, purchases off-the-shelf systems, develops minor new systems, and sustains all USAOTC simulation and instrumentation systems. The OT Simulation and Instrumentation(S&I) (Sustainment and Minor Development) program funds the expertise and the adaptation, purchases, minor development and sustainment requirements that support systems undergoing OT. Costs unique to specific systems under test may require PM funding.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: ATEC Common Technology Tools	3.265	2.144	0.736
Articles:	0	0	
<b>Description:</b> These funds also support development of the Command, Control and Communication Driver (C3 Driver), Test and Evaluation Enterprise Architecture (TEEA), and ATEC Technology Tools. The C3 Driver supports the Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR), ABCS 6.3, 6.4, BCTM, JTRS, and WIN-T development and integration at the Central Technical Support Facility (CTSF) Fort Hood, TX and contractor locations as the Army's single DT C3 simulator/stimulator, etc.			
FY 2010 Accomplishments: Funds the development of the C3 Driver, TEEA, and ATEC Common Technology Tools.			
FY 2011 Plans: Funds the development of the C3 Driver, TEEA, and ATEC Common Technology Tools.			
FY 2012 Plans: Funds the development of the C3 Driver, TEEA, and ATEC Common Technology Tools.			
Title: Modeling, Simulation and Instrumentation	24.724	19.872	22.440
Articles:	0	0	

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011				
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 6: RDT&E Management Support	R-1 ITEM NOMENCLATURE PE 0605602A: Army Technical Test Instrumentation and Targets  PROJECT 62C: MODELING AND SIMULATION INSTRUMENTATION						
B. Accomplishments/Planned Programs (\$ in Millions, Article	Quantities in Each)		FY 2010	FY 2011	FY 2012		
<b>Description:</b> The individual accomplished technology projects with 70-15, Table 1, 22 Mar 06, include but are not limited to: DoD Info (DIACAP) for many OTC Modeling, Simulation, and Instrumentation Technology Capabilities and associated data management, Test T Capabilities, Network Control Systems/Battle Command Simulation Instrumentation - IMASE, Automated Rigging Kit Analysis Tool Susetc.	ormation Assurance Certification and Accreditation on Systems, Sustainment and Operations of all OT echnology Integration, OASIS, Test Technology En, and Instrumentation, RTCA, ExCIS FSA, ISR Signary	Process C execution mulation and					
FY 2010 Accomplishments: Funds were utilized for the sustainment, development, and upgradinstrumentation systems identified under the POM submission FY categories shown above but were not limited to: RTCA sustainme upgrade, and integration of systems of systems, OTC Technology Geometric Advanced Video Enhanced Location Systems (GAVELS Tool, GPS Modernization, High-speed Digital Recording System, as	10-15. The programs executed that fall under the ent and minor upgrades, TTEC Operations for M&S Base Support, ExCIS FSA, IMASE ISSS & ISGT, S), Mobile Optical Tracking Systems, Automated F	sustainment, BCNIS,					
FY 2011 Plans: FY11 Planned Programs: Funds will be utilized for the sustainmer simulation, and instrumentation systems identified under the POM the ATEC?s domain categories shown above but were not limited for M&S sustainment, upgrade, and integration of systems of systems of SSS & ISGT, BCNIS, Geometric Advanced Video Enhanced Local Automated Rigging Kit Tool, GPS Modernization, High-speed Digital Control of Systems of Syst	submission FY12-17. The programs executed that to: RTCA sustainment and minor upgrades, TTEC ems, OTC Technology Base Support, ExCIS FSA, ation Systems (GAVELS), Mobile Optical Tracking	at fell under C Operations IMASE					
FY 2012 Plans: FY12 Planned Programs: The individual accomplished technology Regulation 70-15, Table 1, 22 Mar 06, include but are not limited to Process (DIACAP) for many OTC Modeling, Simulation, and InstruTechnology Capabilities and associated data management, Test T Capabilities, Network Control Systems/Battle Command Simulation Instrumentation - IMASE, Automated Rigging Kit Analysis Tool Susetc.	o: DoD Information Assurance Certification and Aumentation Systems, Sustainment and Operations Technology Integration? OASIS, Test Technology n, and Instrumentation, RTCA, ExCIS FSA, ISR S	ccreditation of all OTC Execution mulation and					
Title: Mobile Optical Tracking System - Congressional Add		Articles:	0.960 0	-	-		

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT	
2040: Research, Development, Test & Evaluation, Army	PE 0605602A: Army Technical Test	62C: MODE	ELING AND SIMULATION
BA 6: RDT&E Management Support	Instrumentation and Targets	INSTRUME	ENTATION

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012
<b>Description:</b> Enhancement of Mobile Optical Tracking System (MOTS) with the inclusion of All Sky Imaging capability. Contract awarded 4th quarter FY 10.			
FY 2010 Accomplishments: Congressional increase for HQ OPerational Test Command FTD-MTD to develop Mobile Optical Tracking System (MOTS). MOTS is a tracking system that will provide teh Time Space Position Information (TSPI) required to analyze the end game of engagements by systems such as the Counter Rocket Artillery Mortar Systems.			
Accomplishments/Planned Programs Subtotals	28.949	22.016	23.176

# C. Other Program Funding Summary (\$ in Millions)

N/A

## D. Acquisition Strategy

N/A

## E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

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