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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: <i>Research, Development, Test & Evaluation, Army</i> BA 6: <i>RDT&E Management Support</i>				PE 0604759A: <i>Major T&E Investment</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	49.942	42.102	49.437	-	49.437	53.933	53.013	47.385	47.005	Continuing	Continuing
983: <i>Reagan Test Site (RTS) T&E Investments</i>	8.372	8.805	8.771	-	8.771	8.728	7.675	7.437	7.175	Continuing	Continuing
984: <i>Major Developmental Testing Instrumentation</i>	34.357	25.935	31.601	-	31.601	32.759	31.008	25.723	25.412	Continuing	Continuing
986: <i>Major Operational Test Instrumentation</i>	7.213	7.362	9.065	-	9.065	12.446	14.330	14.225	14.418	Continuing	Continuing

Note

Change Summary Explanation: FY12 includes increases of \$8.771 million for Project 983 - Reagan Test Site (RTS) T&E Investments and \$5.265 million for Project 984 - Major Developmental Testing Instrumentation and a decrease of 0.022 million for Project 986 - Major Operational Test Instrumentation.

A. Mission Description and Budget Item Justification

This program funds the development and acquisition of major developmental test instrumentation for the U.S. Army Test and Evaluation Command's (ATEC) Developmental Test Command (DTC) test activities: White Sands Test Center (WSTC), NM; Yuma Test Center, (YTC), AZ; Aberdeen Test Center (ATC), MD; Electronic Proving Ground (EPG), AZ; Redstone Technical Test Center (RTTC), AL; Aviation Technical Test Center (ATTC), AL; and for the Reagan Test Site (RTS) at the US Army Kwajalein Atoll (USAKA), which is managed by the Space and Missile Defense Command. The program also funds development and acquisition of Operational Test Command's (OTC) major field instrumentation. Requirements for instrumentation are identified through a long range survey of project managers, Research Development and Engineering Centers (RDECs), and Battle Laboratories developing future weapon systems and the test programs that support these systems. Army testing facilities are also surveyed to determine major testing capability shortfalls.

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APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE				
2040: Research, Development, Test & Evaluation, Army		PE 0604759A: Major T&E Investment				
BA 6: RDT&E Management Support						
B. Program Change Summary (\$ in Millions)		FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget		51.576	42.102	35.423	-	35.423
Current President's Budget		49.942	42.102	49.437	-	49.437
Total Adjustments		-1.634	-	14.014	-	14.014
• Congressional General Reductions			-			
• Congressional Directed Reductions			-			
• Congressional Rescissions		-	-			
• Congressional Adds			-			
• Congressional Directed Transfers			-			
• Reprogrammings		-	-			
• SBIR/STTR Transfer		-1.634	-			
• Adjustments to Budget Years		-	-	14.014	-	14.014

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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 0604759A: Major T&E Investment				PROJECT 983: Reagan Test Site (RTS) T&E Investments			
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
983: Reagan Test Site (RTS) T&E Investments	8.372	8.805	8.771	-	8.771	8.728	7.675	7.437	7.175	Continuing	Continuing
Quantity of RDT&E Articles											
A. Mission Description and Budget Item Justification											
This activity funds improvement and modernization (I&M) for the Ronald Reagan Ballistic Missile Defense Test Site (RTS). Funding upgrades and combats parts obsolescence of the radars, telemetry, optics, range safety, communications, command/control and other equipment essential to meet requirements of the Services and DoD agencies and crucial for investment protection of the sensor suite. These upgrades are critical both to maintain a state of the art instrumentation suite and to the successful collection of data supporting test and evaluation assessments and operational decisions for the Army; Navy; Air Force; U.S. Strategic Command (STRATCOM); Missile Defense Agency (MDA); Defense Advanced Research Projects Agency (DARPA); National Aeronautics and Space Administration (NASA); and other customers. Reagan Test Site (RTS) located in the Republic of the Marshall Islands, is a remote, secure activity of the Major Range and Test Facility Base (MRTFB).											
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2010	FY 2011	FY 2012	
Title: RTS Distributed Operations (RDO) Articles: Description: RTS Distributed Operations FY 2010 Accomplishments: Provide for distributed operation of the Range instrumentation from Continental U.S. Command and Control (C2) sites. FY 2011 Plans: Will Continue to provide for distributed operation of the Range instrumentation from Continental U.S. Command and Control (C2) sites.								2.075	2.000	-	
								0	0		
Title: RTS Optics Modernization Program (ROMP) Articles: Description: Funding is provided for the following effort FY 2010 Accomplishments: Provided funding to Modernize RTS optics sensor suite, fixing deficiencies and enabling remote operations of the equipment. FY 2011 Plans:								3.010	1.600	1.572	
								0	0		

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APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 6: RDT&E Management Support	R-1 ITEM NOMENCLATURE PE 0604759A: Major T&E Investment	PROJECT 983: Reagan Test Site (RTS) T&E Investments		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
Will continue to Modernize RTS optics sensor suite, fixing deficiencies and enabling remote operations of the equipment. FY 2012 Plans: Modernize RTS optics sensor suite, fixing deficiencies and enabling remote operations of the equipment.				
Title: Millimeter Wave (MMW) Ka-Band Tubes Description: MMW Ka-Band Tubes FY 2010 Accomplishments: Millimeter Wave (MMW) Ka-Band Tubes.		Articles: 0.350 0	-	-
Title: Radar Reliability Improvement Program (RRI). Description: Funding is provided for the following effort FY 2010 Accomplishments: Address technology refresh, obsolescence and sustainment issues for critical radar system operation. FY 2011 Plans: Will address technology refresh, obsolescence and sustainment issues for critical radar system operation. FY 2012 Plans: Will continue to address technology refresh, obsolescence and sustainment issues for critical radar system operation.		Articles: 0.646 0	0.550 0	0.570
Title: Radar Computer and Software Refresh Description: Funding is provided for the following effort FY 2010 Accomplishments: Funded the replacement of obsolete main radar computer for all RTS radars and refresh software to run on new hardware. FY 2011 Plans: Continues to replace obsolete main radar computer for all RTS radars and refresh software to run on new hardware. FY 2012 Plans:		Articles: 0.650 0	1.705 0	1.964

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2010	FY 2011	FY 2012
Will Replace obsolete main radar computer for all RTS radars and refresh software to run on new hardware.						
Title: Radar Open System Architecture (ROSA) Refresh. Description: ROSA Refresh FY 2010 Accomplishments: Funds technology refresh in the RTS radars, replacing obsolete components. FY 2011 Plans: Will continue to Implement technology refresh in the RTS radars, replacing obsolete components.				Articles: 0.500 0	0.350 0	-
Title: MMW Limited Bandwidth (BW) Expansion Program. Description: Funding is provided for the following effort FY 2010 Accomplishments: Funded the Upgrade of MMW bandwidth to 4 Gigahertz (GHz). FY 2011 Plans: Will fund the Upgrade of MMW bandwidth to 4 Gigahertz (GHz). FY 2012 Plans: Continues the Upgrade of MMW bandwidth to 4 Gigahertz (GHz).				Articles: 0.360 0	0.400 0	0.196
Title: Telemetry (TM) Modernization Study. Description: Funding is provided for the following effort FY 2010 Accomplishments: Replaced outdated TM equipment with modern digital systems and enable remote operation. FY 2011 Plans: Will Replace outdated TM equipment with modern digital systems and enable remote operation. FY 2012 Plans:				Articles: 0.457 0	1.200 0	1.964

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APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 6: RDT&E Management Support	R-1 ITEM NOMENCLATURE PE 0604759A: Major T&E Investment	PROJECT 983: Reagan Test Site (RTS) T&E Investments		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
Continues to Replace outdated TM equipment with modern digital systems and enable remote operation.				
Title: Multiple Simultaneous Engagement (MSE) Flight Safety. Description: Funding is provided for the following effort FY 2010 Accomplishments: Funded the modernization and upgrade to flight safety systems to accommodate customer requirements. FY 2011 Plans: Will Modernize and upgrade flight safety systems to accommodate customer requirements. FY 2012 Plans: Continues to Modernize and upgrade flight safety systems to accommodate customer requirements.		Articles: 0.324 0	0.500 0	0.982
Title: Legacy Servo Upgrade Program. Description: Funding is provided for the following effort FY 2011 Plans: Replace and upgrade obsolete antenna servos and interlock systems at the RTS radars. FY 2012 Plans: Will continue to Replace and upgrade obsolete antenna servos and interlock systems at the RTS radars.		Articles: -	0.500 0	0.786
Title: Mission Data Network (MDN) Modernization. Description: MDN Modernization. FY 2012 Plans: Replace outdated network equipment and improve on-atoll bandwidth to support increasing mission critical customer requirements.		-	-	0.491
Title: RTS Automation and Decision Support. Description: Funding is provided for the following effort FY 2012 Plans:		-	-	0.246

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011
Addition of automation measures and more sophisticated algorithms to improve operator efficiency.			
Accomplishments/Planned Programs Subtotals		8.372	8.805
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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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 6: <i>RDT&E Management Support</i>				R-1 ITEM NOMENCLATURE PE 0604759A: <i>Major T&E Investment</i>				PROJECT 984: <i>Major Developmental Testing Instrumentation</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
984: <i>Major Developmental Testing Instrumentation</i>	34.357	25.935	31.601	-	31.601	32.759	31.008	25.723	25.412	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This project develops and acquires major test instrumentation to perform developmental testing of weapon systems at U. S. Army Test and Evaluation Command's (ATEC) Developmental Test Command (DTC) activities which include: Yuma Test Center (YTC), AZ; Aberdeen Test Center (ATC), MD; Electronic Proving Ground (EPG), AZ; White Sands Test Center (WSTC), NM; Redstone Test Center (RTC), AL.

Projects are designated as a major test program based on their visibility, assessed relative technical risk (medium-high), schedule risk, cost (generally greater than \$1 Million per year or \$5 Million for the total project) and applicability to other mission areas or services. These projects are technically demanding, state-of-the-art, unique instrumentation assets or suites to meet the technology shortfalls, and generally result from development programs managed by a professional project management team. Fiber Optic Network II (FON II) is the installation of digital fiber optic cable and transmission electronics to modernize secure and expand the backbone telecommunication and data transmission network in support of Aberdeen Test Center. Systems Test and Integration Laboratory (STIL) is the development of a systems integration and test lab for use in developmental testing and integration engineering, including a virtual test environment to support integration testing of aviation electronic systems as a part of modernization of army aircraft. Advanced Distributed Modular Acquisition System (ADMAS) Product Improvement Program develops very small and low power pocket sized ADMAS systems which will extend the Versatile Information Systems Integrated Online system's (VISION) capabilities to support dismounted and small robotic platforms. . Range Radar Replacement Program (RRRP) will replace obsolete tracking radars at Redstone Test Center (RTC), Aberdeen Test Center (ATC), Electronic Proving Ground (EPG), White Sands Missile Range (WSMR) and Yuma Proving Ground (YPG) with modern instrumentation radars. Digital Network Migration (DNM) is the development of mobile assets for support of remote testing areas and linking instrumentation assets to Test Support Network and Cox Range Control Center (CRCC). Quantitative Visualization (QV) for Test and Evaluation is the development of QV integration models to enable rapid conversion of test data into visual representations. Mobile Multi-sensor Time-Space Position Information (TSPI) System (MMTS) is the development of a tracking system for weapons with low/flat trajectories and low radar cross sections. Common Range Integrated Instrumentation System (CRIIS) Rapid Prototype Initiative (RPI) will meet critical requirements to provide global positioning system (GPS) based Time, Space, Position, Information (TSPI) instrumentation to support the testing of a variety of platforms including advanced aircraft, ships, helicopters, Unmanned Aerial Vehicles (UAVs), Ground Vehicles and dismounted soldiers. Advanced Ballistic Data Acquisition develops capabilities that will permit Yuma Test Center (YTC) and Aberdeen Test Center (ATC) to test and generate safety releases for new systems being introduced by the on-going Army Transformation as part of the Precision Effort and testing of Interim and Legacy weapons. Common Range Integrated Instrumentation System (CRIIS) Objective Program provides precision location instrumentation which will significantly increase the T&E ranges' capability to meet the test instrumentation needs of the tri-service range users. Electromagnetic Environmental Effects (E3) Electromagnetic Radiation Effects (EMRE) Systems Modernization - This project will upgrade equipment at the WSMR Electromagnetic Radiation Effects (EMRE) site where Electromagnetic Environmental Effects (E3) testing is performed to evaluate survivability and vulnerability of military systems. Project will upgrade and replace signal transmitters, refurbish an anechoic test chamber, replace data acquisition equipment and install a new turntable to support test items.

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2010	FY 2011	FY 2012
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Digital Network Migration (DNM). Articles: Description: Completes EMD phase contract activities for the Digital Network Migration (DNM). FY 2010 Accomplishments: Completed EMD for support of testing in remote areas and linking of instrumentation assets to the Test Support Network and Cox Range Control Center (CRCC).			3.075 0	-	-
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Quantitative Visualization (QV) models. Articles: Description: Completes EMD phase contract activities for the Quantitative Visualization (QV) models. FY 2010 Accomplishments: Completed EMD for the Quantitative Visualization (QV) models to enable rapid conversion of test data into visual representations.			0.482 0	-	-
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Fiber Optic Network II (FON II) - Aberdeen Test Center (ATC) Articles: Description: Continue EMD phase contract activities for the Fiber Optic Network II (FON II) - Aberdeen Test Center (ATC). FY 2010 Accomplishments: Continued EMD for the Fiber Optic Network II (FON II) - Aberdeen Test Center (ATC). Continues installation of digital fiber optic cable and transmission electronics to modernize, secure and expand the backbone telecommunication and data transmission network in support of Aberdeen Test Center. FY 2011 Plans: Continues EMD for the Fiber Optic Network II (FON II) - Aberdeen Test Center (ATC). Continues installation of digital fiber optic cable and transmission electronics to modernize, secure and expand the backbone telecommunication and data transmission network in support of Aberdeen Test Center. FY 2012 Plans: Completes EMD for the Fiber Optic Network II (FON II) - Aberdeen Test Center (ATC). Completes installation of digital fiber optic cable and transmission electronics to modernize, secure and expand the backbone telecommunication and data transmission network in support of Aberdeen Test Center.			6.661 0	5.590 0	2.370
			4.425	4.000	3.966

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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 6: <i>RDT&E Management Support</i>		R-1 ITEM NOMENCLATURE PE 0604759A: <i>Major T&E Investment</i>		PROJECT 984: <i>Major Developmental Testing Instrumentation</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2010	FY 2011	FY 2012
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Systems Test and Integration Laboratory (STIL). Articles: Description: Continue EMD phase contract activities for the Systems Test and Integration Laboratory (STIL). FY 2010 Accomplishments: Continues EMD for the Systems Test and Integration Laboratory (STIL) for use in developmental testing and integration engineering, including a virtual test environment to support integration testing of aviation electronic systems as a part of modernization of army aircraft. FY 2011 Plans: Continues EMD for the Systems Test and Integration Laboratory (STIL) for use in developmental testing and integration engineering, including a virtual test environment to support integration testing of aviation electronic systems as a part of modernization of army aircraft. FY 2012 Plans: Continues EMD for the Systems Test and Integration Laboratory (STIL) for use in developmental testing and integration engineering, including a virtual test environment to support integration testing of aviation electronic systems as a part of modernization of army aircraft.			0	0	
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Mobile Multi-sensor Time Space Position Information (TSPI) System. Articles: Description: Completes EMD phase contract activities for the Mobile Multi-sensor Time Space Position Information (TSPI) System (MMTS)(formerly Hypervelocity Advanced TSPI System). FY 2010 Accomplishments: Completed EMD for the Mobile Multi-sensor Time Space Position Information (TSPI) System (MMTS)(formerly Hypervelocity Advanced TSPI System). Completes development of a tracking system for weapons with low/flat trajectories and low radar cross sections.			5.143 0	-	-
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Common Range Integrated Instrumentation System (CRIIS) Rapid Prototype Initiative RPI. Articles:			1.012 0	2.172 0	-

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2010	FY 2011	FY 2012
<p>Description: EMD phase contract activities for the Common Range Integrated Instrumentation System (CRIIS) Rapid Prototype Initiative (RPI).</p> <p>FY 2010 Accomplishments: Continued EMD for the Common Range Integrated Instrumentation System (CRIIS) Rapid Prototype Initiative (RPI). Continues the development of precision Time Space Position Information (TSPI) capabilities for dismounted personnel and low dynamic vehicles (LDV) (i.e. such as ground or aircraft that are subjected to accelerations of 4g or less) engaged in Test and Evaluation (T&E) events.</p> <p>FY 2011 Plans: Completes EMD for the Common Range Integrated Instrumentation System (CRIIS) Rapid Prototype Initiative (RPI). Completes the development of precision Time Space Position Information (TSPI) capabilities for dismounted personnel and low dynamic vehicles (LDV) (i.e. such as ground or aircraft that are subjected to accelerations of 4g or less) engaged in Test and Evaluation (T&E) events.</p>					
<p>Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Advanced Distributed Modular Acquisition System (ADMAS).</p> <p align="right">Articles:</p> <p>Description: EMD phase contract activities for the Advanced Distributed Modular Acquisition System (ADMAS) Product Improvement Program (PIP).</p> <p>FY 2010 Accomplishments: Continued EMD for the Advanced Distributed Modular Acquisition System (ADMAS) Product Improvement Program (PIP). Continues the development of very small and low power pocket sized ADMAS systems. ADMAS PIP continues expansion of the current ADMAS Instrumentation Suite, comprised of the Macro and Micro ADMAS. The expansion includes updates to the existing hardware and software of current suite, plus the development of two new devices (Nano and Pico ADMAS).</p> <p>FY 2011 Plans: Continues EMD for the Advanced Distributed Modular Acquisition System (ADMAS) Product Improvement Program (PIP). Continues the development of very small and low power pocket sized ADMAS systems. ADMAS PIP continues expansion of the current ADMAS Instrumentation Suite, comprised of the Macro and Micro ADMAS. The expansion includes updates to the existing hardware and software of current suite, plus the development of two new devices (Nano and Pico ADMAS).</p> <p>FY 2012 Plans:</p>			3.589 0	3.733 0	1.715

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2010	FY 2011	FY 2012
Completes EMD for the Advanced Distributed Modular Acquisition System (ADMAS) Product Improvement Program (PIP). Completes the development of very small and low power pocket sized ADMAS systems. ADMAS PIP completes expansion of the current ADMAS Instrumentation Suite, comprised of the Macro and Micro ADMAS. The expansion includes updates to the existing hardware and software of current suite, plus the development of two new devices (Nano and Pico ADMAS).					
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Range Radar Replacement Program. Articles:			9.970 0	4.438 0	18.005
Description: EMD phase contract activities for the Range Radar Replacement Program. FY 2010 Accomplishments: Continued EMD for the Range Radar Replacement Program. Continue the upgrade or replace obsolete tracking and surveillance radars at Electronic Proving Ground (EPG), White Sands Missile Range (WSMR) and Yuma Proving Ground (YPG) with modern digital equipment. FY 2011 Plans: Continues EMD for the Range Radar Replacement Program. Continue the upgrade or replace obsolete tracking and surveillance radars at EPG, WSMR and YPG with modern digital equipment. FY 2012 Plans: Continues Engineering Manufacturing Development (EMD) for the Range Radar Replacement Program for the Fly-out and Close-in Radars systems in preparation for replacement of equipment at Aberdeen Test Center (ATC), Redstone Test Center (RTC), White Sands Test Center (WSTC) and Yuma Test Center (YTC).					
Title: Engineering and Manufacturing Development (EMD) phase contract activity of the Common Range Integrated Instrumentation System (CRIIS) Objective Program. Description: Starts EMD phase contract activities of the Common Range Integrated Instrumentation System (CRIIS) Objective Program. FY 2012 Plans: Starts EMD of the Common Range Integrated Instrumentation System (CRIIS) Objective Program. This is a replacement system for the Advanced Range Data System (ARDS). This system will meet the critical need for measuring the precision location of units under test within the Time-Space domain. It provides a significant increase to the Test & Evaluation ranges' capability to meet the test instrumentation needs of the tri-service range users. The improvements are data link, TSPI accuracy, miniaturization, standard interfaces, and system encryption.			-	-	0.280
			-	-	5.265

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2010	FY 2011	FY 2012
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the E3 Systems Modernization (EMRE) project. Description: EMD phase contract activities for the E3 Systems Modernization (EMRE) project. FY 2012 Plans: Starts EMD for the E3 Systems Modernization (EMRE). Project will upgrade and replace signal transmitters, refurbish an anechoic test chamber, replace data acquisition equipment and install a new turntable to support test items.						
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Joint Warfighter Test and Training Capability (JWTTTC). Articles: Description: Continue EMD phase contract activities for the Joint Warfighter Test and Training Capability (JWTTTC). FY 2011 Plans: Continue EMD phase contract activities for the Joint Warfighter Test and Training Capability (JWTTTC).				-	3.137 0	-
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Advanced Ballistic Data Acquisition (ABDA). Articles: Description: EMD phase contract activities for the Advanced Ballistic Data Acquisition (ABDA). FY 2011 Plans: EMD phase contract activities for the Advanced Ballistic Data Acquisition (ABDA).				-	1.481 0	-
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Kineto Tracking Mounts (KTM) Recapitalization. Articles: Description: EMD phase contract activities for the Kineto Tracking Mounts (KTM) Recapitalization. FY 2011 Plans: EMD phase contract activities for the Kineto Tracking Mounts (KTM) Recapitalization.				-	1.384 0	-
Accomplishments/Planned Programs Subtotals				34.357	25.935	31.601

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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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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
986: Major Operational Test Instrumentation	7.213	7.362	9.065	-	9.065	12.446	14.330	14.225	14.418	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This project supports the development of major field instrumentation for Operational Testing (OT), Force Development Testing and Experimentation (FDTE), Army Warfighting Experiments (AWE) for the U.S. Army Test and Evaluation Command (ATEC), and Army Transformation. Each initiative set forth in this program element is directly tied to tactical systems that support the following Army Modernization Plan operational capability areas: Dominate Maneuver, Full Dimensional Protection, Precision Engagement, and Focused Logistics. The cornerstone of this effort is the Operational Test-Tactical Engagement System (OT-TES) vice Objective Real-Time Casualty Assessment and Instrumentation Suite (Objective RTCA) that provides users a high fidelity, realistic, real-time capability to measure the performance of hardware and personnel under tactical conditions for small and large-scale operations. Operational Test-Tactical Engagement System (OT-TES) allows the U.S. Army to test all Current-to-Future, Future Force, and Brigade Combat Team (BCT) Modernization activities capabilities in a force-on-force operational environment.

Major Instrumentation and M&S in Support of Network Integration Test will develop Major Instrumentation and M&S efforts in support of Network Integration Test related to limited fiber upgrade for WSMR, additional common data collection devices, and updated, ATEC-wide, distributed data storage, analyses software, and tools. In addition, develop and field a Real-Time, Hardware-in-the-Loop, Modeling and Simulation (M&S) Federation, which can be accredited and portray Blue and Threat Computer Network Device (CND) and Controller Area Network (CAN) will begin in FY12.

Test and Training Common Technology Initiative; Network, Real Time Casualty Assessment (RTCA), Data Collection and After Action Review (AAR) will develop and sustain Army Test and Training Instrumentation Test Bed, support Trade-Off Studies, Development of Common Standards, Analysis of Alternatives, Cost Benefit Analyses, Test Technology Demonstrations and/or Technology Readiness Events. This capability will also provide risk reduction to future developed assets required to meet test and training needs. These tools will collect, store and analyze data from this new dimension of digital battlefield warfare. This effort responds to the current Operations Tempo (OPTEMPO) and Personnel Tempo (PERSTEMPO) demands to force the U.S. Army to conduct more realistic, more accurate, and comprehensive evaluations at reduced costs by virtually replicating a greater number of troop resources in force-on-force testing and training exercises.

Operational Test Command (OTC) Advanced Simulation & Instrumentation Systems (OASIS) Enterprise Integration System (EIS) supports the OTC simulation and test support capabilities which will be integrated with other Federation models and simulations to create a comprehensive operational testing Live, Virtual, Constructive (LVC) environment. This includes planning, coordination for test control, tactical systems and partnerships. Operational testing requirements continue to rapidly evolve based on advanced technologies to support the Warfighter. As a result, it has become a necessity to upgrade the supporting operational testing LVC, test management, and test control, environment to ensure appropriate testing can be performed to properly characterize Brigade Combat Team-Modernization (BCTM), Joint Tactical Radio Systems (JTRS), Distributed Common Ground Systems-Army (DCGS-A), Aerial Common Sensor (ACS), and Future Force Warfighter capabilities.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0604759A: <i>Major T&E Investment</i>	PROJECT 986: <i>Major Operational Test Instrumentation</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Operational Test-Tactical Engagement System (OT-TES). Articles: Description: Continue EMD phase contract activities for OT-TES. FY 2010 Accomplishments: Continued EMD for the development of hardware, software, interfaces, and new capabilities to ensure the Real-Time Casualty Assessment (RTCA) requirements for upcoming operational tests are supported. Develops efforts that will initially be directed toward OT-TES; Development efforts include: Integration with New Tactical Systems Under Test, Integration with Live, Virtual, and Constructive Simulation environments, RTCA Capabilities for Active Protection Systems and Countermeasures, RTCA Capabilities for Communications/Sensor Kills and Degradations, Completed Development, Integration, and Testing of the Communications Upgrade - New Player Units, New Communications Sub-System, New Encryption and RTCA Capabilities for Electronic Warfare and Countermeasures. FY 2011 Plans: Continues EMD for the development of hardware, software, interfaces, and new capabilities to ensure the Real-Time Casualty Assessment (RTCA) requirements for upcoming operational tests are supported. Develops efforts that will initially be directed toward OT-TES; Development efforts include: Integration with New Tactical Systems Under Test, Integration with Live, Virtual, and Constructive Simulation environments, RTCA Capabilities for Active Protection Systems and Countermeasures, RTCA Capabilities for Communications/Sensor Kills and Degradations.		6.383 0	6.400 0
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Operational Test Command (OTC) Analytic Simulation and Instrumentation Suite (OASIS) Enterprise Integration Solution. Articles: Description: EMD phase contract activities for the Operational Test Command (OTC) Analytic Simulation and Instrumentation Suite (OASIS) Enterprise Integration Solution (EIS). FY 2010 Accomplishments: Continues EMD for the Operational Test Command (OTC) Analytic Simulation and Instrumentation Suite (OASIS) Enterprise Integration Solution (EIS). FY 2011 Plans:		0.830 0	0.962 0
		0.761	

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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 0604759A: Major T&E Investment	PROJECT 986: Major Operational Test Instrumentation		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
Continues EMD for the Operational Test Command (OTC) Analytic Simulation and Instrumentation Suite (OASIS) Enterprise Integration Solution (EIS). FY 2012 Plans: Continues EMD by developing Operational Test Command (OTC) Analytic Simulation and Instrumentation Suite (OASIS) Enterprise Integration Solution (EIS). Funding supports integration of Federation members by developing OASIS EIS into a LVC environment which will support OTC's operational testing requirements for Brigade Combat Team-Modernization (BCTM) (formally FCS), battle command (e.g. Joint Tactical Radio Systems (JTRS), intelligence, surveillance, and reconnaissance (ISR) (e.g. Distributed Common Ground Systems-Army (DCGS-A), Aerial Common Sensor (ACS), etc.				
Title: Major Instrumentation and Modeling and Simulation (M&S) in Support of Network Integration Test Description: Develop Major Instrumentation and Modeling and Simulation (M&S) efforts in support of Network Integration Test related to limited fiber upgrade for White Sands Missile Range (WSMR), additional NetADMAS Production, and updated, Army Test and Evaluation Command (ATEC)-wide, distributed data storage, analyses software, and tools. In addition, develop and field a Real-Time, Hardware-in-the-Loop, M&S Federation, which can be accredited and portray Blue and Threat Computer Network Device (CND) and Controller Area Network (CAN) FY 2012 Plans: Begin development of Major Instrumentation and Modeling and Simulation (M&S) efforts in support of Network Integration Test related to limited fiber upgrade for White Sands Missile Range (WSMR).		-	-	5.000
Title: Test and Training Common Technology Initiative; Network, Real Time Casualty Assessment (RTCA), Data Collection and After Action Review (AAR) Description: Develop and sustain Army Test and Training Instrumentation Test Bed, support Trade-Off Studies, development of Common Standards, Analysis of Alternatives, Cost Benefit Analyses, and Test Technology Demonstrations and/or Technology Readiness Events. This capability will also provide risk reduction to future developed assets required to meet test and training needs. These tools will collect, store and analyze data from this new dimension of digital battlefield warfare. FY 2012 Plans: This initiative will begin to develop and sustain Army Test and Training Instrumentation Test Bed, support Trade-Off Studies, development of Common Standards, Analysis of Alternatives, Cost Benefit Analyses, and Test Technology Demonstrations or Technology Readiness Events.		-	-	3.304
Accomplishments/Planned Programs Subtotals		7.213	7.362	9.065

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0604759A: <i>Major T&E Investment</i>	PROJECT 986: <i>Major Operational Test Instrumentation</i>
<u>C. Other Program Funding Summary (\$ in Millions)</u> N/A		
<u>D. Acquisition Strategy</u> N/A		
<u>E. Performance Metrics</u> 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.		