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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2014 Army	<b>DATE:</b> April 2013
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APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE							
2040: <i>Research, Development, Test &amp; Evaluation, Army</i> BA 6: <i>RDT&amp;E Management Support</i>					PE 0604759A: <i>Major T&amp;E Investment</i>							
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	47.972	37.394	46.672	-	46.672	52.631	58.144	58.448	58.160	Continuing	Continuing
983: <i>Reagan Test Site (RTS) T&amp;E Investments</i>	-	8.489	8.823	7.762	-	7.762	7.526	7.261	7.383	0.000	Continuing	Continuing
984: <i>Major Developmental Testing Instrumentation</i>	-	30.682	21.615	33.253	-	33.253	39.146	42.818	43.661	49.722	Continuing	Continuing
986: <i>Major Operational Test Instrumentation</i>	-	8.801	6.956	5.657	-	5.657	5.959	8.065	7.404	8.438	Continuing	Continuing

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

**Note**

Change Summary Explanation: Replacing obsolete radar increased requirements for Range Radar Replacement Program.

**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) test activities: White Sands Test Center (WSTC), NM; Yuma Test Center, (YTC), AZ; Aberdeen Test Center (ATC), MD; Electronic Proving Ground (EPG), AZ; Redstone Test Center (RTC), AL; and for the Reagan Test Site (RTS) at the U.S. 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.

**UNCLASSIFIED**

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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 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	49.359	37.394	39.178	-	39.178
Current President's Budget	47.972	37.394	46.672	-	46.672
Total Adjustments	-1.387	0.000	7.494	-	7.494
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.387	-			
• Adjustments to Budget Years	-	-	7.494	-	7.494

**UNCLASSIFIED**

Exhibit R-2A, RDT&E Project Justification: PB 2014 Army										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE				PROJECT			
2040: Research, Development, Test & Evaluation, Army BA 6: RDT&E Management Support					PE 0604759A: Major T&E Investment				983: Reagan Test Site (RTS) T&E Investments			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
983: Reagan Test Site (RTS) T&E Investments	-	8.489	8.823	7.762	-	7.762	7.526	7.261	7.383	0.000	Continuing	Continuing
Quantity of RDT&E Articles												

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

**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)**

	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<b>Title:</b> RTS Optics Modernization Program (ROMP)  <b>Articles:</b>  <b>Description:</b> Funding is provided for the following effort  <b>FY 2012 Accomplishments:</b> Modernized RTS optics sensor suite, fixing deficiencies and enabling remote operations of the equipment.  <b>FY 2013 Plans:</b> Continues to modernize RTS optics sensor suite, fixing deficiencies and enabling remote operations of the equipment	1.600 0	1.250 0	0.000
<b>Title:</b> Radar Reliability Improvement Program (RRI).  <b>Articles:</b>  <b>Description:</b> Funding is provided for the following effort  <b>FY 2012 Accomplishments:</b>	0.457 0	0.750 0	0.587

## UNCLASSIFIED

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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 2012	FY 2013	FY 2014
Continued to address technology refresh, obsolescence and sustainment issues for critical radar system operation. <b>FY 2013 Plans:</b> Continues to address technology refresh, obsolescence and sustainment issues for critical radar system and L-Band Modulator operation. <b>FY 2014 Plans:</b> Will continue to address critical RADAR issues related to component obsolescence and sustainment that require significant re-design to incorporate commercially available options.				
<b>Title:</b> Radar Computer and Software Refresh  <b>Articles:</b>  <b>Description:</b> Funding is provided for the following effort  <b>FY 2012 Accomplishments:</b> Designing risk reduction prototype of replacement main radar computer for all RTS radars and refresh software to run on new hardware. Completed Multi Millimeter Wave (MMW) replacement.  <b>FY 2013 Plans:</b> Continues to upgrade the system to a more common and widely available hardware platform with multiple vendor support and software.		2.211 0	0.650 0	0.000
<b>Title:</b> MMW Limited Bandwidth (BW) Expansion Program.  <b>Articles:</b>  <b>Description:</b> Funding is provided for the following effort  <b>FY 2012 Accomplishments:</b> Completed the Upgrade of MMW bandwidth to 4 Gigahertz (GHz).		0.450 0	0.000	0.000
<b>Title:</b> Telemetry (TM) Modernization Study.  <b>Articles:</b>  <b>Description:</b> Funding is provided for the following effort  <b>FY 2012 Accomplishments:</b>		0.050 0	0.500 0	0.460

# UNCLASSIFIED

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
Replaced outdated TM equipment with modern digital systems and enabled remote operation. Started software prototype of next gen software radio approach. <b>FY 2013 Plans:</b> Continues to replace outdated TM equipment with modern digital systems and enable remote operation. <b>FY 2014 Plans:</b> Will continue extended software radio approach.				
<b>Title:</b> Multiple Simultaneous Engagement (MSE) Flight Safety.  <b>Description:</b> Funding is provided for the following effort  <b>FY 2012 Accomplishments:</b> Modernized and upgraded flight safety systems to accommodate customer requirements for 2x2 engagement. <b>FY 2013 Plans:</b> Continues to modernize and upgrade flight safety systems to accomodate customer requirements. <b>FY 2014 Plans:</b> Will design and implement Range Safety Systems (RSS) upgrade of safety control system replacement.		<b>Articles:</b> 0.159 0	1.050 0	0.610
<b>Title:</b> Legacy Servo Upgrade Program.  <b>Description:</b> Funding is provided for the following effort  <b>FY 2012 Accomplishments:</b> Continued to replace and upgrade obsolete antenna servos and interlock systems at the RTS radars. <b>FY 2013 Plans:</b> Continues to replace and upgrade obsolete antenna serves and interlock systems at the RTS radars. <b>FY 2014 Plans:</b> Will continue to replace and upgrade obsolete antenna serves and interlock systems at the RTS radars.		<b>Articles:</b> 0.642 0	0.950 0	1.100
<b>Title:</b> Mission Data Network (MDN) Modernization.  <b>Description:</b> MDN Modernization.		<b>Articles:</b> 2.120 0	2.395 0	1.100

## UNCLASSIFIED

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
FY 2012 Accomplishments: Targeted improvements to mission network security architecture. Replaced outdated network equipment and improve on-atoll bandwidth to support increasing mission critical customer requirements.				
FY 2013 Plans: Continues replacing outdated network equipment and will improve on-atoll bandwidth to support increasing mission critical customer requirements.				
FY 2014 Plans: Will continue new network architecture changes to improve on-toll bandwidth to support increasing custom requirements..				
Title: RTS Automation and Decision Support.  Description: Funding is provided for the following effort		0.800 0	1.278 0	1.475
Articles:				
FY 2012 Accomplishments: Addition of automation measures and more sophisticated algorithms to improve operator efficiency.				
FY 2013 Plans: Continues addition of automation measures and more sophisticated algorithms to improve operator efficiency.				
FY 2014 Plans: Will continue addition of automation measures and more sophisticated algorithms to improve operator efficiency.				
Title: TRADEX L-Band Modulator  Description: Funding is provided for the following effort		0.000	0.000	2.430
FY 2014 Plans: Will continue replacement tube-based modulator and legacy high-voltage power supply with a commercial solid-state unit.				
Accomplishments/Planned Programs Subtotals		8.489	8.823	7.762
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army</i> BA 6: <i>RDT&amp;E Management Support</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604759A: <i>Major T&amp;E Investment</i>	<b>PROJECT</b> 983: <i>Reagan Test Site (RTS) T&amp;E Investments</i>
<b>D. Acquisition Strategy</b> N/A		
<b>E. Performance Metrics</b> 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.		

**UNCLASSIFIED**

Exhibit R-2A, RDT&E Project Justification: PB 2014 Army										DATE: April 2013		
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 984: Major Developmental Testing Instrumentation			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
984: Major Developmental Testing Instrumentation	-	30.682	21.615	33.253	-	33.253	39.146	42.818	43.661	49.722	Continuing	Continuing
Quantity of RDT&E Articles												

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

**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) 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 \$1.5 Million per year or \$7.5 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 (PIP) 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. 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 will upgrade equipment at the WSMR EMRE site where 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. Nuclear Effects Test Capability Modernization upgrades nuclear facilities at White Sands Missile Range (WSMR). These upgrades include the Relativistic Electron Beam Accelerator (REBA), Fast Burn Reactor, Gamma Range Facility, Linear Electron Accelerator (LINAC), Electromagnetic Pulse and the Solar Furnace. Warrior Injury Assessment Manikin (WIAMan) Anthropomorphic Test Device (ATD) plans to develop and produce Warrior-representative ATDs that incorporate associated biomedically-validated injury assessment tools to better characterize dynamic events and injury risks measured in Live Fire Test & Evaluation (LFT&E) and vehicle development efforts.

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Army			<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army</i> BA 6: <i>RDT&amp;E Management Support</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0604759A: <i>Major T&amp;E Investment</i>		<b>PROJECT</b> 984: <i>Major Developmental Testing Instrumentation</i>	
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>			<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<b>Title:</b> Engineering and Manufacturing Development (EMD) phase contract activity for the Fiber Optic Network II (FON II) - Aberdeen Test Center (ATC)  <b>Articles:</b>  <b>Description:</b> Continue EMD phase contract activities for the Fiber Optic Network II (FON II) - Aberdeen Test Center (ATC).  <b>FY 2012 Accomplishments:</b> Completed EMD for the Fiber Optic Network II (FON II) - Aberdeen Test Center (ATC). Completed 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.			2.301 0	0.000	0.000
<b>Title:</b> Engineering and Manufacturing Development (EMD) phase contract activity for the Systems Test and Integration Laboratory (STIL).  <b>Articles:</b>  <b>Description:</b> Continue EMD phase contract activities for the Systems Test and Integration Laboratory (STIL).  <b>FY 2012 Accomplishments:</b> Continued 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.  <b>FY 2013 Plans:</b> 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.  <b>FY 2014 Plans:</b> Will continue 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.			3.851 0	5.940 0	5.135
<b>Title:</b> Engineering and Manufacturing Development (EMD) phase contract activity for the Advanced Distributed Modular Acquisition System (ADMAS).  <b>Articles:</b>  <b>Description:</b> EMD phase contract activities for the Advanced Distributed Modular Acquisition System (ADMAS) Product Improvement Program (PIP).			1.665 0	0.000	0.000

**UNCLASSIFIED**

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<b>APPROPRIATION/BUDGET ACTIVITY</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army</i> BA 6: <i>RDT&amp;E Management Support</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0604759A: <i>Major T&amp;E Investment</i>		<b>PROJECT</b> 984: <i>Major Developmental Testing Instrumentation</i>	
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>			<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<b><i>FY 2012 Accomplishments:</i></b> Completed EMD for the Advanced Distributed Modular Acquisition System (ADMAS) Product Improvement Program (PIP). Completed the development of very small and low power pocket sized ADMAS systems. ADMAS PIP completed expansion of the current ADMAS Instrumentation Suite, comprised of the Macro and Micro ADMAS. The expansion included updates to the existing hardware and software of current suite, plus the development of two new devices (Nano and Pico ADMAS).					
<b><i>Title:</i></b> Engineering and Manufacturing Development (EMD) phase contract activity for the Range Radar Replacement Program. <b><i>Articles:</i></b>			16.921 0	15.675 0	22.086
<b><i>Description:</i></b> EMD phase contract activities for the Range Radar Replacement Program.  <b><i>FY 2012 Accomplishments:</i></b> Continued 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).  <b><i>FY 2013 Plans:</i></b> 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).  <b><i>FY 2014 Plans:</i></b> Will continue 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).					
<b><i>Title:</i></b> Engineering and Manufacturing Development (EMD) phase contract activity of the Common Range Integrated Instrumentation System (CRIIS) Objective Program. <b><i>Articles:</i></b>			0.272 0	0.000	0.769
<b><i>Description:</i></b> Starts EMD phase contract activities of the Common Range Integrated Instrumentation System (CRIIS) Objective Program.  <b><i>FY 2012 Accomplishments:</i></b> Started EMD of the Common Range Integrated Instrumentation System (CRIIS) Objective Program. This was a replacement system for the Advanced Range Data System (ARDS). This system met the critical need for measuring the precision location of units under test within the Time-Space domain. It provided a significant increase to the Test & Evaluation ranges' capability					

**UNCLASSIFIED**

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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 984: Major Developmental Testing Instrumentation		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
to meet the test instrumentation needs of the tri-service range users. The improvements were data link, TSPI accuracy, miniaturization, standard interfaces, and system encryption.  <b>FY 2014 Plans:</b> Will continue start of EMD of the Common Range Integrated Instrumentation System (CRIIS) Objective Program. This will be 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 will provide a significant increase to the Test & Evaluation ranges' capability to meet the test instrumentation needs of the tri-service range users. The improvements will be the data link, TSPI accuracy, miniaturization, standard interfaces, and sytem encryption.				
<b>Title:</b> Engineering and Manufacturing Development (EMD) phase contract activity for the E3 Systems Modernization (EMRE) project.  <b>Articles:</b>  <b>Description:</b> EMD phase contract activities for the E3 Systems Modernization (EMRE) project.  <b>FY 2012 Accomplishments:</b> Started EMD for the E3 Systems Modernization (EMRE). Project upgraded and replaced signal transmitters, refurbish an anechoic test chamber, replace data acquisition equipment and install a new turntable to support test items.  <b>FY 2014 Plans:</b> Will continue the EMD for the E3 Systems Modernization (EMRE) T2 and T3 transmitter systems. Project will continue to upgrade and replace signal transmitters, refurbish an anechoic test chamber, replace data acquisition equipment and install a new turntable to support test items.		5.672 0	0.000	3.613
<b>Title:</b> Engineering and Manufacturing Development (EMD) phase contract activity for the Nuclear Effects Test Capability Modernization.  <b>Description:</b> Will begin the EMD phase contract activity for the Nuclear Effects Test Capability Modernization.  <b>FY 2014 Plans:</b> Will start the Engineering and Manufacturing Development (EMD) phase contract activity for the Nuclear Effects Test Capability Modernization. This program will upgrade nuclear facilities at White Sands Missile Range (WSMR).		0.000	0.000	0.850
<b>Title:</b> Engineering and Manufacturing Development (EMD) phase contract activity for the Warrior Injury Assessment Manikin (WIAMan) Anthropomorphic Test Device (ATD).  <b>Description:</b> Begin the EMD phase contract activity for the WIAMan Anthropomorphic Test Device (ATD).		0.000	0.000	0.800

**UNCLASSIFIED**

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>		<b>FY 2012</b>	<b>FY 2013</b>
<b>FY 2014 Plans:</b> Will begin the EMD phase contract activity for the WIAMan Anthropomorphic Test Device (ATD). This program will develop and produce Warrior-representative ATDs that incorporate associated biomedically-validated injury assessment tools to better characterize dynamic events and injury risks measured in Live Fire Test & Evaluation (LFT&E) and vehicle development efforts.			
<b>Accomplishments/Planned Programs Subtotals</b>		30.682	21.615
<b>C. Other Program Funding Summary (\$ in Millions)</b> N/A <b>Remarks</b>  <b>D. Acquisition Strategy</b> N/A  <b>E. Performance Metrics</b> 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.			

# UNCLASSIFIED

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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 986: Major Operational Test Instrumentation			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
986: Major Operational Test Instrumentation	-	8.801	6.956	5.657	-	5.657	5.959	8.065	7.404	8.438	Continuing	Continuing
Quantity of RDT&E Articles												

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

## Note

Operational Test Command (OTC) Advanced Simulation & Instrumentation Systems (OASIS) Enterprise Integration System (EIS) will transition to Army Test and Evaluation Command (ATEC) Test and Evaluation Enterprise Architecture (ATEA).

## A. Mission Description and Budget Item Justification

Major Instrumentation and Modeling and Simulation (M&S) in Support of Network Integration Test will develop Major Instrumentation and M&S efforts in support of Network Integration Test related to data and voice communications upgrades for White Sands Missile Range (WSMR), additional common data collection devices, and updated, Army Test and Evaluation Command (ATEC)-wide, distributed data storage, analysis software, and tools. In addition, development and fielding 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).

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 by virtually replicating a greater number of troop resources in force-on-force testing and training exercises to conduct more realistic, accurate, and comprehensive evaluations at reduced costs.

Operational Test Command (OTC) Advanced Simulation & Instrumentation Systems (OASIS) Enterprise Integration System (EIS) supports the OTC simulation and test support capabilities will transition to Army Test and Evaluation Command (ATEC) Test and Evaluation Enterprise Architecture (ATEA). Operational testing of enterprise/systems of systems (SoS) capabilities requires an integrated test technology tools enterprise: 1) Test Planning & Control systems/networks, 2) Live-virtual-constructive (LVC) simulations, 3) Data Collection, Reduction, Analysis (DCRA), and visualization tools and 4) tactical systems and networks. The OASIS-EIS will support test tool integration in three major areas: 1) harmonize OT test technology integration with other acquisition efforts (RTCA, networks, data collection) at the ATEC level, 2) Joint Network Emulation (JNE) program management to PEO-STRI (PM-ITTS) to support leverage by other PEO STRI and ATEC offices (initially TSMO, EPG and RTC), and 3) develop an ATEC and PEO-STRI program to achieve efficiencies and cost savings through shared development and enhancement of key simulation (primarily gaming, virtual, and constructive), and LVC integration capabilities. Initial focus for shared simulation/LVC enablers will be in the area of network, fires and ISR simulations and LVC architecture planning, engineering and integration tools.

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
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 2012	FY 2013	FY 2014
<p><b>Title:</b> Engineering and Manufacturing Development (EMD) phase contract activity for the Operational Test Command (OTC) Advanced Simulation and Instrumentation System (OASIS) Enterprise Integration Solution.</p> <p><b>Articles:</b></p> <p><b>Description:</b> EMD phase contract activities for the Operational Test Command (OTC) Advanced Simulation and Instrumentation System (OASIS) Enterprise Integration System (EIS).</p> <p><b>FY 2012 Accomplishments:</b> Continued EMD by developing Operational Test Command (OTC) Advanced Simulation and Instrumentation Suite (OASIS) Enterprise Integration System (EIS). Funding provided the connecting infrastructure within the enterprise to create a comprehensive operational testing Live-Virtual-Constructive (LVC) environment which also enabled and supported test control, and data collection, reduction and analysis (DCRA). Developed and delivered capabilities that were necessary to adequately support evaluation of emerging systems. Systems lacked the capabilities needed to collect test data during operational tests to provide an adequate level of confidence. Without the necessary data, evaluations of Army systems will be inaccurate and incomplete. Testing of complex systems was too expensive, and augmentation of system under test and ensuring confidence in the test is the only cost effective method. Systems may include, Network Integration Event (NIE) (13.1, 13.2), Defense Common Ground Station-Army (DGCS-A), Warfighter Information Network (WIN-T), Enhanced Medium Altitude Reconnaissance and Surveillance System (EMARSS).</p> <p><b>FY 2013 Plans:</b> Continues EMD by developing Operational Test Command (OTC) Advanced Simulation and Instrumentation Suite (OASIS) Enterprise Integration System (EIS). Funding supports integration of Federation members by OASIS EIS into a LVC environment to support OTC's operational testing support requirements for Joint Network Emulation (JNE), Network Integration Event (NIE) (13.1, 13.2), Defense Common Ground Station-Army (DGCS-A), Warfighter Information Network (WIN-T), Enhanced Medium Altitude Reconnaissance and Surveillance System (EMARSS).</p> <p><b>FY 2014 Plans:</b> Start EMD by expanding into Army Test and Evaluation Command (ATEC) Test and Evaluation Enterprise Architecture (ATEA). Funding will support integration of Federation members by ATEA into the larger ATEC community and support an enterprise into a LVC environment to support testing requirements for Network Integration Event (NIE) (14.1, 14.2), Defense Common Ground Station-Army (DGCS-A), Warfighter Information Network (WIN-T), Enhanced Medium Altitude Reconnaissance and Surveillance System (EMARSS).</p>		0.740 0	0.786 0	3.041
<p><b>Title:</b> Major Instrumentation and Modeling and Simulation (M&amp;S) in Support of Network Integration Test</p> <p><b>Articles:</b></p>		4.862 0	5.000 0	1.616

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Army		<b>DATE:</b> April 2013	
<b>APPROPRIATION/BUDGET ACTIVITY</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army</i> BA 6: <i>RDT&amp;E Management Support</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604759A: <i>Major T&amp;E Investment</i>	<b>PROJECT</b> 986: <i>Major Operational Test Instrumentation</i>	
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>		<b>FY 2012</b>	<b>FY 2013</b>
<p><b>Description:</b> Develop Major Instrumentation and Modeling and Simulation (M&amp;S) efforts in support of Network Integration Test. In addition, develop and field a Real-Time, Hardware-in-the-Loop, M&amp;S Federation, which can be accredited and portray Blue and Threat Computer Network Device (CND) and Controller Area Network (CAN)</p> <p><b>FY 2012 Accomplishments:</b> Began development of Major Instrumentation and Modeling and Simulation (M&amp;S) efforts in support of Network Integration Test related to limited data and voice communications upgrades for White Sands Missile Range (WSMR).</p> <p><b>FY 2013 Plans:</b> Continues to fund critical Major Instrumentation and M&amp;S efforts in support of Network Integration Test related to limited fiber upgrades for WSMR, additional Net Advanced Distributed Modular Acquisition System (ADMAS) Production, and updates, Army Test and Evaluation Command (ATEC)-wide distributes data storage, analysis software and tools.</p> <p><b>FY 2014 Plans:</b> Will continue to fund critical Major Instrumentation and M&amp;S efforts in support of Network Integration Test related to limited data and voice communications upgrades for WSMR, additional Net Advanced Distributed Modular Acquisition System (ADMAS) Production, and will update, Army Test and Evaluation Command (ATEC)-wide, will distribute data storage, analyses software and tools.</p>			
<p><b>Title:</b> Test and Training Common Technology Initiative; Network, Real Time Casualty Assessment (RTCA), Data Collection and After Action Review (AAR)</p> <p align="right"><b>Articles:</b></p> <p><b>Description:</b> Develop and sustain Army Test and Training Instrumentation Test Bed. 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.</p> <p><b>FY 2012 Accomplishments:</b> Began to develop and sustain Army Test and Training Instrumentation Test Bed, supported Trade-Off Studies, development of Common Standards, Analysis of Alternatives, Cost Benefit Analyses, and Test Technology Demonstrations or Technology Readiness Events.</p> <p><b>FY 2013 Plans:</b> Continues to support Trade-Off Studies, Analysis of Trade-Off Studies, Analysis of Alternatives, Cost Benefit Analyses, Test Technology Demonstrations or Technology Readiness Events to ensure the requirements and performance specifications for emerging/future instrumentation and tactical engagement simulation systems meet the needs of the operational test and</p>		3.199 0	1.170 0
			1.000

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Army		<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army</i> BA 6: <i>RDT&amp;E Management Support</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604759A: <i>Major T&amp;E Investment</i>	<b>PROJECT</b> 986: <i>Major Operational Test Instrumentation</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b> evaluation community. The initiative also helps develop and sustain an Army Test and Training Instrumentation Test Bed, as well as increasing the rigor of testing, to ensure that proposed solutions fulfill those requirements and thus reduces risk.  <b><i>FY 2014 Plans:</i></b> Will continue to support Trade-Off Studies, Analysis of Trade-Off Studies, Analysis of Alternatives, Cost Benefit Analyses, Test Technology Demonstrations or Technology Readiness Events to ensure the requirements and performance specifications for emerging/future instrumentation and tactical engagement simulation systems meet the needs of the operational test and evaluation community. The initiative will also help develop and sustain an Army Test and Training Instrumentation Test Bed, as well as increase the rigor of testing, to ensure that proposed solutions fulfill those requirements and thus reduce risk.		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<b>Accomplishments/Planned Programs Subtotals</b>		8.801	6.956	5.657
<b>C. Other Program Funding Summary (\$ in Millions)</b> N/A  <b>Remarks</b>  <b>D. Acquisition Strategy</b> N/A  <b>E. Performance Metrics</b> 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.				