

# UNCLASSIFIED

**Exhibit R-2, RDT&E Budget Item Justification:** PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE							
2040: <i>Research, Development, Test &amp; Evaluation, Army</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>					PE 0604746A: <i>Automatic Test Equipment Development</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	-	13.932	10.815	6.701	-	6.701	15.008	14.397	10.019	10.142	Continuing	Continuing
L59: <i>Diagnost/Expert Sys</i>	-	10.549	8.237	4.683	-	4.683	10.458	10.038	6.228	5.942	Continuing	Continuing
L65: <i>Test Equipment Development</i>	-	3.383	2.578	2.018	-	2.018	4.550	4.359	3.791	4.200	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

FY14, \$5282 reduction to support higher priority projects

## A. Mission Description and Budget Item Justification

This program element (PE) provides for development and testing of general-purpose test equipment, state-of-the-art diagnostics and prognostics technologies, and software and systems to support the increasingly complex electronic components of the Army's new and upgraded weapon systems. It focuses on implementation of commercial test and diagnostic technologies across multiple weapon platforms to minimize the cost of troubleshooting and maintenance of Army equipment in the field.

Modular, reconfigurable automatic and semi-automatic systems are being developed under this program to satisfy weapon system test and diagnostics requirements. The Next Generation Automatic Test System (NGATS), currently under development, provides state-of-the-art test and diagnostic capabilities to support current and future weapon systems. It is the platform for transitioning Agile Rapid Global Combat Support System (ARGCS) technologies into the Army weapon system support structure, and it will replace several aging automatic test systems (ATS) that are becoming prohibitively expensive to operate and maintain.

This PE also provides for continued development and improvement of general-purpose test equipment and calibration standards with emphasis on the incorporation of digital electronics and tailoring of configurations to improve deployability, mobility and survivability of the support equipment.

FY 2014 Base funding for this program continues development of the Army's standard Next Generation Automatic Test System (NGATS) which will improve deployability and mobility of test and diagnostic equipment. The NGATS provides state-of-the-art test and diagnostic capabilities and a means for reducing the Army's test equipment operating and support costs and the costs for supporting a number of the Army's vital warfighting systems. The FY14 funding will also develop or significantly modify test equipment to satisfy modular force and homeland security support requirements that cannot be accommodated with test equipment currently available in the commercial marketplace.

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APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE			
2040: Research, Development, Test & Evaluation, Army		PE 0604746A: Automatic Test Equipment Development			
BA 5: System Development & Demonstration (SDD)					
B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	14.361	10.815	11.983	-	11.983
Current President's Budget	13.932	10.815	6.701	-	6.701
Total Adjustments	-0.429	0.000	-5.282	-	-5.282
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.009	-			
• SBIR/STTR Transfer	-0.420	-			
• Adjustments to Budget Years	-	-	-5.282	-	-5.282

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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 5: System Development & Demonstration (SDD)					R-1 ITEM NOMENCLATURE PE 0604746A: Automatic Test Equipment Development				PROJECT L59: Diagnost/Expert Sys			
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
L59: Diagnost/Expert Sys	-	10.549	8.237	4.683	-	4.683	10.458	10.038	6.228	5.942	Continuing	Continuing
Quantity of RDT&E Articles												
# FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012												
## The FY 2014 OCO Request will be submitted at a later date												
A. Mission Description and Budget Item Justification												
This project funds development of and system enhancements for the Next Generation Automatic Test System (NGATS). The NGATS is a general-purpose automatic test system (ATS) that provides test and diagnostic capabilities required to support current and future weapons and combat support systems and will facilitate retirement of aging and obsolete test equipment that is imposing increasing logistics and operations and support cost burdens. It is the platform for transitioning Agile Rapid Global Combat Support System (ARGCS) technologies into the Army weapon system support structure. The ARGCS initiative was sponsored by the Department of Defense, and all Services are expected to transition demonstrated technologies into their ATS programs. This project also provides for continuing efforts to upgrade and improve general-purpose automatic test equipment to satisfy test and diagnostic requirements of the Army's new and upgraded weapon systems; development and adaptation of automatic test equipment required to overcome existing deficiencies and voids in organic test and diagnostic capabilities; development and testing of common procedures utilizing existing test program sets and software applications; and market surveys of commercially available test equipment, methods and procedures to determine applicability to Army requirements. The test and diagnostic systems and procedures developed under this project are essential for ensuring the operational readiness, accuracy and effectiveness of the Army's warfighting systems.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2012	FY 2013	FY 2014	
Title: NGATS Logistics Support Products  Articles:  Description: Develop NGATS initial logistics support products (including provisioning, technical manuals and calibration)  FY 2012 Accomplishments: Continue development of initial logistics support products  FY 2013 Plans: Continue development of initial logistics support products  FY 2014 Plans: Complete development of initial logistics support products									0.500 0	0.500 0	0.500	
Title: Developmental and Operational Follow-on Testing  Articles:									0.200 0	0.000	1.000	

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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 5: System Development & Demonstration (SDD)	R-1 ITEM NOMENCLATURE PE 0604746A: Automatic Test Equipment Development	PROJECT L59: Diagnost/Expert Sys		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
Description: Complete Increment 1 developmental and operational follow-on testing activities  FY 2012 Accomplishments: Continue developmental and operational testing  FY 2014 Plans: Conduct product qualification testing (PQT)				
Title: NGATS Increment 2  Articles:  Description: Develop and test hardware and software for NGATS Increment 2 system  FY 2012 Accomplishments: Continue development and testing of Increment 2 hardware and software; initiate development and testing of hardware and software for support of Increment 2 systems (Avenger, Multiple Launch Rocket System, Tube-launched Optically-tracked Wire-guided (TOW) Missile System, Paladin and Common Remotely Operated Weapons Station (CROWS) II)  FY 2013 Plans: Continue development and testing of Increment 2 hardware and software; initiate development and testing of hardware and software for support of Increment 2 systems (Avenger, Multiple Launch Rocket System, Tube-launched Optically-tracked Wire-guided (TOW) Missile System, Paladin and Common Remotely Operated Weapons Station (CROWS) II)  FY 2014 Plans: Continue development and testing of Increment 2 hardware and software; continue development and testing of hardware and software for support of Increment 2 systems (Avenger, Multiple Launch Rocket System, TOW Missile System, Paladin and CROWS II)		3.000 0	1.500 0	1.500
Title: NGATS Electro-Optics Subsystem  Articles:  Description: Develop and test hardware and software for NGATS electro-optics (EO) subsystem (to include the capability to support new ground and aerial sensors for unmanned air and ground vehicles)  FY 2012 Accomplishments:		2.252 0	2.655 0	0.500

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
Continue development and testing of hardware and software for NGATS EO subsystem; initiate development and testing of hardware and software for support of Increment 3 systems (Apache, Kiowa Warrior, CROWS II and Stryker Remote Weapons Station) <b>FY 2013 Plans:</b> Continue development and testing of hardware and software for NGATS EO subsystem; continue development and testing of hardware and software for support of Increment 3 systems (Apache, Kiowa Warrior, CROWS II and Stryker Remote Weapons Station) <b>FY 2014 Plans:</b> Continue development and testing of hardware and software for NGATS EO subsystem; continue development and testing of hardware and software for support of Increment 3 systems (Apache, Kiowa Warrior, CROWS II and Stryker Remote Weapons Station)				
<b>Title:</b> General-Purpose Shop Replaceable Unit Diagnostic Capability <b>Articles:</b> <b>Description:</b> Develop expanded general-purpose shop replaceable unit diagnostic capability <b>FY 2012 Accomplishments:</b> Continue development of expanded general-purpose shop replaceable unit diagnostic capability <b>FY 2013 Plans:</b> Continue development of expanded general-purpose shop replaceable unit diagnostic capability <b>FY 2014 Plans:</b> Continue development of expanded general-purpose shop replaceable unit diagnostic capability		0.500 0	0.500 0	0.250
<b>Title:</b> Abrams/Bradley Test Program Set (TPS) Redesign <b>Articles:</b> <b>Description:</b> Redesign, test and evaluate Abrams/Bradley TPSs <b>FY 2012 Accomplishments:</b> Continue redesign, test and evaluation of TPSs <b>FY 2013 Plans:</b> Continue redesign, test and evaluation of TPSs <b>FY 2014 Plans:</b>		1.000 0	0.500 0	0.250

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
Complete redesign, test and evaluation of TPSs				
Title: Additional Software Capabilities  Description: Develop software capabilities to incorporate common logistics operating environment (CLOE)/netcentric and embedded diagnostics data collection and analysis for closed loop diagnostic maintenance in support of condition-based maintenance  FY 2012 Accomplishments: Continue development of expanded software capabilities  FY 2013 Plans: Continue development of expanded software capabilities  FY 2014 Plans: Continue development of expanded software capabilities		Articles: 0.800 0	0.500 0	0.250
Title: Smart TPSs  Description: Develop enhanced smart TPS hardware and software  FY 2012 Accomplishments: Initiate development of enhanced smart TPSs  FY 2013 Plans: Continue development of enhanced smart TPSs  FY 2014 Plans: Continue development of enhanced smart TPSs		Articles: 0.600 0	0.500 0	0.100
Title: Power and Weight Enhancements  Description: Develop power and weight enhancements for NGATS  FY 2012 Accomplishments: Initiate development of power and weight enhancements  FY 2013 Plans:		Articles: 0.517 0	0.500 0	0.137

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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 5: <i>System Development &amp; Demonstration (SDD)</i>				<b>R-1 ITEM NOMENCLATURE</b> PE 0604746A: <i>Automatic Test Equipment Development</i>			<b>PROJECT</b> L59: <i>Diagnost/Expert Sys</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>		
Continue development of power and weight enhancements											
<b>FY 2014 Plans:</b> Continue development of power and weight enhancements											
<b>Title:</b> Abrams/Bradley EO TPS Development											
<b>Articles:</b>							1.180 0	1.082 0	0.196		
<b>Description:</b> Develop Abrams/Bradley TPSs for use with NGATS EO asset											
<b>FY 2012 Accomplishments:</b> Initiate development of TPSs											
<b>FY 2013 Plans:</b> Continue development of TPSs											
<b>FY 2014 Plans:</b> Continue development of TPSs											
<b>Accomplishments/Planned Programs Subtotals</b>							10.549	8.237	4.683		
<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• ∴ OPA3, SSN MB4000, Integrated Family of Test Equipment (IFTE)	36.937	45.508	67.506		67.506	59.106	59.571	56.920	66.966	Continuing	Continuing
<b>Remarks</b>											
<b>D. Acquisition Strategy</b>											
This developmental project consists of cooperative in-house and competitive and sole-source contractual actions. When the necessary expertise and capability are available within the Department of Defense, services required for the individual development projects are ordered from the government source; otherwise, commercial contracts are used. Equipment required for developmental projects is obtained by contract from the commercial supplier. Developmental efforts for the Next Generation Automatic Test System (NGATS) are being completed under a sole-source contract awarded to the prime contractor for the Integrated Family of Test Equipment off-platform testers. Full-rate production of the system will be a competitive award. NGATS is following an evolutionary acquisition strategy using incremental development to satisfy Army depot and field testing requirements for new and existing systems. It will replace existing legacy Army automatic test equipment (ATE) (i.e., Base Shop Test Facility (BSTF)(V)3, BSTF(V)5, and Direct Support Electrical System Test Set) as well as Army depot system specific ATE.											

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Army		<b>DATE:</b> April 2013
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**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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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2014 Army</b>												<b>DATE:</b> April 2013			
<b>APPROPRIATION/BUDGET ACTIVITY</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>						<b>R-1 ITEM NOMENCLATURE</b> PE 0604746A: <i>Automatic Test Equipment Development</i>						<b>PROJECT</b> L59: <i>Diagnost/Expert Sys</i>			
<b>Product Development (\$ in Millions)</b>				<b>FY 2012</b>		<b>FY 2013</b>		<b>FY 2014 Base</b>		<b>FY 2014 OCO</b>		<b>FY 2014 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>All Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Software Development/ Verification/Validation	Various	Various,:Various	23.271	4.780	Feb 2012	4.737		1.046	Mar 2014	-		1.046	Continuing	Continuing	Continuing
Prototype Development	SS/CPFF	Northrop Grumman, Rolling Meadows, IL:.	13.472	2.252	Feb 2012	1.062		-		-		-	Continuing	Continuing	Continuing
Hardware/Support Items Development	Various	Various,:Various	55.129	2.317	Feb 2012	1.438		2.000	Apr 2014	-		2.000	Continuing	Continuing	Continuing
<b>Subtotal</b>			91.872	9.349		7.237		3.046		0.000		3.046			
<b>Support (\$ in Millions)</b>				<b>FY 2012</b>		<b>FY 2013</b>		<b>FY 2014 Base</b>		<b>FY 2014 OCO</b>		<b>FY 2014 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>All Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Project Management/ Technical Support	Various	Various,:Various	46.691	0.600	Dec 2011	0.600		0.437	Mar 2014	-		0.437	Continuing	Continuing	Continuing
Other Direct	Various	Various,:Various	2.790	0.400	Dec 2011	0.400		0.200	Feb 2014	-		0.200	Continuing	Continuing	Continuing
<b>Subtotal</b>			49.481	1.000		1.000		0.637		0.000		0.637			
<b>Test and Evaluation (\$ in Millions)</b>				<b>FY 2012</b>		<b>FY 2013</b>		<b>FY 2014 Base</b>		<b>FY 2014 OCO</b>		<b>FY 2014 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>All Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Operational Testing	Various	Various,:Various	3.814	0.200		-		0.500	Aug 2014	-		0.500	Continuing	Continuing	Continuing
Developmental Testing	Various	Various,:Various	1.046	-		-		0.500	May 2014	-		0.500	Continuing	Continuing	Continuing
<b>Subtotal</b>			4.860	0.200		0.000		1.000		0.000		1.000			
<b>Remarks</b>															
Test program set (TPS) and contractor developmental test and evalutation are included in the product development cost.															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army										DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 5: System Development & Demonstration (SDD)					R-1 ITEM NOMENCLATURE PE 0604746A: Automatic Test Equipment Development					PROJECT L59: Diagnost/Expert Sys			
	All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	146.213	10.549		8.237		4.683		0.000		4.683			

Remarks

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**Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army**

**DATE:** April 2013

**APPROPRIATION/BUDGET ACTIVITY**

2040: Research, Development, Test & Evaluation, Army  
BA 5: System Development & Demonstration (SDD)

## R-1 ITEM NOMENCLATURE

PE 0604746A: Automatic Test Equipment Development

## PROJECT

## L59: Diagnost/Expert Sys

[illegible]

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Army			<b>DATE:</b> April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604746A: <i>Automatic Test Equipment Development</i>	<b>PROJECT</b> L59: <i>Diagnost/Expert Sys</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Full Rate Production Decision Review	2	2013	2	2013
Full Materiel Release	4	2015	4	2015
First Unit Equipped	4	2015	4	2015
NGATS Testing (Increment 1/PQT)	3	2014	3	2015
NGATS Testing (EO Subsystem)	4	2012	4	2014

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APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 5: System Development & Demonstration (SDD)					R-1 ITEM NOMENCLATURE PE 0604746A: Automatic Test Equipment Development				PROJECT L65: Test Equipment Development			
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
L65: Test Equipment Development	-	3.383	2.578	2.018	-	2.018	4.550	4.359	3.791	4.200	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 supports development and demonstration of state-of-the-art calibration standards and techniques, and upgrades/improvements to existing Army calibration systems. It provides for feasibility studies, market research, inventory analysis, bid sample testing, and prototyping to support calibration systems and general-purpose test and diagnostic equipment acquisitions. Primary efforts under this project include development of calibration software, development of calibration capability for chemical and biological agent detection systems, support of AN/GSM-705 and AN/GSM-421 requirements, improvement of test and measurement equipment performance envelopes via product improvements, and development/evaluation of advance technology and higher reliability calibration systems and general-purpose test, measurement, and diagnostic equipment (TMDE). Product improvements are underway to current test and measurement systems to overcome deficiencies and voids in existing organic capabilities and to ensure the operational readiness, accuracy, effectiveness, and safety of Army weapons and combat support systems. These improvements will employ reconfigurable open electronics architecture and computer-based instrumentation wherever feasible and will be focused on reducing the test equipment footprints to improve deployability and mobility in areas of operation.

**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> AN/GSM-421(V2)	0.050	0.000	0.000
<b>Articles:</b>	0		
<b>Description:</b> Develop and test a tactical, up-armor capable Army calibration system that provides a split-based calibration capability.			
<b>FY 2012 Accomplishments:</b> Complete user testing.			
<b>Title:</b> Calibration Sets (CALSETS) Software Environment and Calibration	1.301	1.126	0.450
<b>Articles:</b>	0	0	
<b>Description:</b> Develop and test an Army automated calibration environment and develop calibration procedures. Test efforts in support of DoD Information Assurance Certification and Accreditation Process (DIACAP).			
<b>FY 2012 Accomplishments:</b>			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
Continue development and evaluation of test and calibration procedures. Conduct development and testing for a calibration software environment. Perform testing efforts for DIACAP issues.  <b>FY 2013 Plans:</b> Continue development and evaluation of calibration procedures. Perform testing efforts for DIACAP issues. Complete testing for initial release of a calibration software environment.  <b>FY 2014 Plans:</b> Continue development and evaluation of calibration procedures. Perform testing and evaluation to support calibration software environment. Develop and test DIACAP for calibration instrument controllers..				
<b>Title:</b> Physical Instruments  <b>Articles:</b>  <b>Description:</b> Research, develop and test physical parameter calibration instrumentation to support areas such as chemical/ biological agent detection systems, night vision testers, small arms gages, pneumatic pressure systems, temperature, etc.  <b>FY 2012 Accomplishments:</b> Develop and test calibration standards for optical, radiation and liquid/gas flow calibration test requirements.  <b>FY 2013 Plans:</b> Complete development and test of liquid hydrocarbon flow calibration and test standards. Continue development of traceable calibration standards for biological and chemical agent detectors and gas mask testers. Continue development and test of pneumatic and hydraulic transport standards.  <b>FY 2014 Plans:</b> Develop and test small arms gage calibration standards. Continue development and test of chemical/biological agent detectors and protective equipment testers.		0.743 0	0.427 0	0.702
<b>Title:</b> Electrical Instruments  <b>Articles:</b>  <b>Description:</b> Research, develop, and test electrical parameter calibration instrumentation to support areas such as deployable recertification set, intrinsic electrical standards, electrical transport standards, etc.  <b>FY 2012 Accomplishments:</b>		0.971 0	0.975 0	0.705

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)							FY 2012	FY 2013	FY 2014		
Perform market research and evaluate commercial equipment and develop performance specifications for acquisition. Continue development of deployable recertification set capability. Continue testing of transport standards. Develop/test intrinsic electrical standards. <b>FY 2013 Plans:</b> Perform market research and evaluate commercial equipment and develop performance specifications for acquisition of transport calibration standards package. Develop requirements and specifications for small, practical intrinsic voltage standards. Complete development and initiate testing of a deployable recertification set capability. Continue development and testing of an intrinsic voltage standard. <b>FY 2014 Plans:</b> Perform market research and evaluate commercial equipment and develop performance specifications for acquisition. Complete environmental studies, testing and evaluation of voltage reference standards. Continue development and testing of intrinsic voltage system. Test and evaluate microwave transport standards for automated network analyzers..											
<b>Title:</b> Test Equipment Modernization  <b>Articles:</b>  <b>Description:</b> Perform market research and evaluation of commercial equipment and develop performance specifications for acquisition.  <b>FY 2012 Accomplishments:</b> Perform market research and evaluation of commercial equipment and develop performance specifications for acquisition.  <b>FY 2013 Plans:</b> Perform market research and evaluation of commercial equipment and develop performance specifications for acquisition.  <b>FY 2014 Plans:</b> Perform market research and evaluation of commercial equipment and develop performance specifications for acquisition.							0.318 0	0.050 0	0.161		
Accomplishments/Planned Programs Subtotals							3.383	2.578	2.018		
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• SSN N10000: Calibration Sets Equipment	13.618	10.494	8.241		8.241	7.798	7.771	7.136	8.158	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army										DATE: April 2013	
<b>APPROPRIATION/BUDGET ACTIVITY</b> 2040: Research, Development, Test & Evaluation, Army BA 5: System Development & Demonstration (SDD)					<b>R-1 ITEM NOMENCLATURE</b> PE 0604746A: Automatic Test Equipment Development				<b>PROJECT</b> L65: Test Equipment Development		
<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014 Base</b>	<b>FY 2014 OCO</b>	<b>FY 2014 Total</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• SSN N11000: Test Equipment Modernization	27.451	24.334	18.755		18.755	28.524	28.767	26.778	22.949	Continuing	Continuing
<b>Remarks</b>											
<b>D. Acquisition Strategy</b> Projects are focused on use of commercial and nondevelopmental item technologies. When programmatic and engineering expertise and capability are available within the Department of Defense, services required for the individual development projects are acquired from the government source; otherwise, commercial services contracts are used to provide these capabilities. Equipment required for development projects is obtained from the commercial supplier. Candidate commercial equipment and nondevelopmental items are identified and evaluated through market research and government testing and evaluation.											
<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.											



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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2014 Army</b>												<b>DATE:</b> April 2013			
<b>APPROPRIATION/BUDGET ACTIVITY</b> 2040: Research, Development, Test & Evaluation, Army BA 5: System Development & Demonstration (SDD)						<b>R-1 ITEM NOMENCLATURE</b> PE 0604746A: Automatic Test Equipment Development						<b>PROJECT</b> L65: Test Equipment Development			
<b>Management Services (\$ in Millions)</b>				<b>FY 2012</b>		<b>FY 2013</b>		<b>FY 2014 Base</b>		<b>FY 2014 OCO</b>		<b>FY 2014 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>All Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
In-house Engineering	SS/LH	Civ Labor:various	2.416	0.600	Apr 2012	0.700		0.715	Oct 2013	-		0.715	Continuing	Continuing	0.000
<b>Subtotal</b>			2.416	0.600		0.700		0.715		0.000		0.715			0.000
<b>Product Development (\$ in Millions)</b>				<b>FY 2012</b>		<b>FY 2013</b>		<b>FY 2014 Base</b>		<b>FY 2014 OCO</b>		<b>FY 2014 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>All Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
AN/GSM-421(V2)	Various	Various:Various	2.346	-		-		-		-		-	Continuing	Continuing	0.000
CALSETS Software Environment and Calibration	Various	Various:Various	4.098	1.009	May 2012	0.600		0.211	Apr 2014	-		0.211	Continuing	Continuing	0.000
Physical Instruments	Various	Various:Various	5.632	0.273	Mar 2012	0.250		0.292	Apr 2014	-		0.292	Continuing	Continuing	0.000
Electrical Instruments	Various	Various:Various	7.287	0.851	Jul 2012	0.578		0.359	Apr 2014	-		0.359	Continuing	Continuing	0.000
Test Equipment Modernization	Various	Various:Various	0.110	0.120	Sep 2012	0.050		-		-		-	Continuing	Continuing	0.000
<b>Subtotal</b>			19.473	2.253		1.478		0.862		0.000		0.862			0.000
<b>Support (\$ in Millions)</b>				<b>FY 2012</b>		<b>FY 2013</b>		<b>FY 2014 Base</b>		<b>FY 2014 OCO</b>		<b>FY 2014 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>All Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Contract Engineering	SS/FFP	University of Alabama, Huntsville:Huntsville, AL	1.837	-		-		0.236	Feb 2014	-		0.236	Continuing	Continuing	0.000
<b>Subtotal</b>			1.837	0.000		0.000		0.236		0.000		0.236			0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 5: System Development & Demonstration (SDD)						R-1 ITEM NOMENCLATURE PE 0604746A: Automatic Test Equipment Development				PROJECT L65: Test Equipment Development					
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
AN/GSM-421(V2)	Various	Various:Various	0.570	0.050	Feb 2012	-		-		-		-	Continuing	Continuing	0.000
CALSETS Software Environment and Calibration	Various	Various:Various	0.150	0.150	May 2012	0.200		0.070	Apr 2014	-		0.070	Continuing	Continuing	0.000
Physical Instruments	Various	Various:Various	1.200	0.100	Mar 2012	0.075		0.088	Mar 2014	-		0.088	Continuing	Continuing	0.000
Electrical Instruments	Various	Various:Various	1.263	0.130	Aug 2012	0.075		0.047	Mar 2014	-		0.047	Continuing	Continuing	0.000
Test Equipment Modernization	Various	Various:Various	0.100	0.100	Sep 2012	0.050		-		-		-	Continuing	Continuing	0.000
Subtotal			3.283	0.530		0.400		0.205		0.000		0.205			0.000
			All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			27.009	3.383		2.578		2.018		0.000		2.018			0.000
Remarks															