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Exhibit R-2, RDT&E Budget Item 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 0303032A: TROJAN - RH12 - MIP							
COST (\$ in Millions)	All Prior Years	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
Total Program Element	-	3.914	4.232	3.465	-	3.465	4.204	5.137	4.570	4.570	Continuing	Continuing
RH5: TROJAN - RH12 - MIP	-	3.914	4.232	3.465	-	3.465	4.204	5.137	4.570	4.570	Continuing	Continuing

[#] 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 is a Military Intelligence Program (MIP). Trojan research and development supports Trojan Classic XXI (TCXXI) and next generation (NexGEN) future capabilities to fulfill the Army's need for a worldwide, deployable, remotable, intelligence, surveillance and reconnaissance support that can dynamically execute operations from sanctuary-based to deployed assets in theater. In support of Army Modernization and Army Force Generation, TCXXI TROJAN NexGen and TROJAN SWARM will provide soldiers with a real-world, hands-on, live and near-real time SIGINT training environment sustaining, maintaining and enhancing their military occupational specialty proficiencies and specific target expertise. This operational readiness training will fulfill the Army's larger intelligence training requirement via a secure, collaborative architecture.

A key factor for future force success is the ability to collect, process and use information about an adversary while preventing similar information from being disclosed. Trojan is a combined operational and readiness mission system which uses advanced networking technology to provide seamless rapid radio relay, secure communications to include voice, data, facsimile, and electronic reconnaissance support to U.S. forces throughout the world. Trojan operations may be easily tailored to fit military intelligence unit training schedules and surged during specific events to involve every aspect of the tactical intelligence collection, processing, analysis and reporting systems. This project engineers, tests and evaluates new digital intelligence collection, processing and dissemination technology using the fielded Trojan systems, prior to the acquisition of those technologies. As part of the objective intelligence architecture, these capabilities will enable processing and dissemination of real-time intelligence data from various sources to form the intelligence needed to issue orders inside the threat decision cycle. To that end, it is imperative that Trojan keeps pace with digitization initiatives in order to respond aggressively to the emerging intelligence communication threats.

UNCLASSIFIED

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APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE			
2040: Research, Development, Test & Evaluation, Army		PE 0303032A: TROJAN - RH12 - MIP			
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	3.916	4.232	4.386	-	4.386
Current President's Budget	3.914	4.232	3.465	-	3.465
Total Adjustments	-0.002	0.000	-0.921	-	-0.921
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-0.002	-	-0.921	-	-0.921

UNCLASSIFIED

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COST (\$ in Millions)	All Prior Years	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
RH5: TROJAN - RH12 - MIP	-	3.914	4.232	3.465	-	3.465	4.204	5.137	4.570	4.570	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 is a Military Intelligence Program (MIP). TROJAN research and development supports TROJAN Classic XXI (TCXXI) and Next Generation (NexGEN) future capabilities to fulfill the Army's need for a worldwide, deployable, remotable, intelligence, surveillance and reconnaissance support that can dynamically execute operations from sanctuary-based to deployed assets in theater. In support of Army Modernization and Army Force Generation, TCXXI TROJAN NexGEN and TROJAN SWARM will provide soldiers with a real-world, hands-on, live and near-real time SIGINT training environment sustaining, maintaining and enhancing their military occupational specialty proficiencies and specific target expertise. This operational readiness training will fulfill the Army's larger intelligence training requirement via a secure, collaborative architecture.												
A key factor for future force success is the ability to collect, process and use information about an adversary while preventing similar information from being disclosed. Trojan is a combined operational and readiness mission system which uses advanced networking technology to provide seamless rapid radio relay, secure communications to include voice, data, facsimile, and electronic reconnaissance support to U.S. forces throughout the world. TROJAN operations may be easily tailored to fit military intelligence unit training schedules and surged during specific events to involve every aspect of the tactical intelligence collection, processing, analysis and reporting systems. This project engineers, tests and evaluates new digital intelligence collection, processing and dissemination technology using the fielded TROJAN systems, prior to the acquisition of those technologies. As part of the objective intelligence architecture, these capabilities will enable processing and dissemination of real-time intelligence data from various sources to form the intelligence needed to issue orders inside the threat decision cycle. To that end, it is imperative that TROJAN keeps pace with digitization initiatives in order to respond aggressively to the emerging intelligence communication threats.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2012	FY 2013	FY 2014	
Title: Integrate and test specialized hardware/software									0.410	0.862	0.705	
									Articles: 0	0		
Description: Integrate and test specialized hardware/software for classified pre-processing of new signals of interest utilizing enhanced signal processing algorithms. Resource development of GL Application Interface for Virtual Environments (GLAIVE) software. Integrated several new National Security Agency (NSA) SW packages.												
FY 2012 Accomplishments:												

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
Integrated and tested specialized hardware/software for classified pre-processing of new signals of interest utilizing enhanced signal processing algorithms. Resource development of GLAIVE software. Integrated several new NSA SW packages. FY 2013 Plans: Integrate and test specialized hardware/software for classified pre-processing of new signals of interest utilizing enhanced signal processing algorithms. Resource development of GLAIVE software. Integrated several new NSA SW packages. FY 2014 Plans: Will integrate and test specialized hardware/software for classified pre-processing of new signals of interest utilizing enhanced signal processing algorithms; resource development of GLAIVE software and integrated several new NSA SW efforts still ongoing. Will develop TROJAN SWARM Intelligence Surveillance Reconnaissance enterprise.				
Title: Multi-bandwidth compression algorithms Articles: Description: Acquire and apply multi-bandwidth compression algorithm technology to maximize TROJAN intelligence network throughput. FY 2012 Accomplishments: Acquired and applied multi-bandwidth compression algorithm technology to maximize TROJAN intelligence network throughput. FY 2013 Plans: Acquire and apply multi-bandwidth compression algorithm technology to maximize TROJAN intelligence network throughput. FY 2014 Plans: Will acquire and apply multi-bandwidth compression algorithm technology to maximize TROJAN intelligence network throughput, as well as new technologies that address Video Encoder/Decoder system improvements.		0.358 0	0.375 0	0.307
Title: Develop prototype quick reaction capability receiver Articles: Description: Develop prototype quick reaction capability receiver packages for fixed and transportable TROJAN systems to acquire non-standard modulations using Digital System Processing (DSP) and Field Programmable Gate Arrays (FPGAs) technologies. FY 2012 Accomplishments:		0.400 0	0.300 0	0.245

UNCLASSIFIED

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
Developed prototype quick reaction capability receiver packages for fixed and transportable TROJAN systems to acquire non-standard modulations using DSP and FPGAs. FY 2013 Plans: Develop prototype quick reaction capability receiver packages for fixed and transportable TROJAN systems to acquire non-standard modulations using DSP and FPGAs. FY 2014 Plans: Will continue development of prototype quick reaction capability receiver packages for fixed and transportable TROJAN systems to acquire non-standard modulations using DSP and FPGAs.				
Title: Integrate Direction Finding Articles: Description: Integrate Direction Finding (DF) and geolocation technologies into Trojan Remote Receiving Groups. FY 2012 Accomplishments: Integrated Direction Finding (DF) and geolocation technologies into TROJAN Remote Receiving Groups. FY 2013 Plans: Integrate Direction Finding (DF) and geolocation technologies into TROJAN Remote Receiving Groups. FY 2014 Plans: Will integrate Direction Finding (DF) and geolocation technologies into Trojan Remote Receiving Groups to include a High Frequency Direction Finding (HFDF) Extension Node 2 and a Wideband graphical user interface (GUI).		0.390 0	0.950 0	0.778
Title: Develop hardware/software interface Articles: Description: Develop hardware/software interface for TCXXI system and NexGEN to ONEROOF storage system FY 2012 Accomplishments: Completed development of hardware/software interface for TCXXI system and NexGEN to ONEROOF storage system		0.445 0	0.000	0.000
Title: Develop specialized software enhancements to the Trojan Articles: Description: Develop specialized software enhancements to the Trojan audio streaming subsystems to improve system redundancy and throughput capacity and system management capabilities; Investigate compression/processing technologies to reduce communications bandwidth requirements for remoted TROJAN systems, including streaming audio technologies.		0.285 0	0.300 0	0.246

UNCLASSIFIED

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
FY 2012 Accomplishments: Developed specialized software enhancements to the TROJAN audio streaming subsystems to improve system redundancy and throughput capacity and system management capabilities; Investigate compression/processing technologies to reduce communications bandwidth requirements for remoted TROJAN systems, including streaming audio technologies.				
FY 2013 Plans: Develop specialized software enhancements to the TROJAN audio streaming subsystems to improve system redundancy and throughput capacity and system management capabilities; Investigate compression/processing technologies to reduce communications bandwidth requirements for remoted TROJAN systems, including streaming audio technologies.				
FY 2014 Plans: Will continue development of specialized software enhancements to the TROJAN audio streaming subsystems to improve system redundancy and throughput capacity and system management capabilities; will investigate compression/processing technologies to reduce communications bandwidth requirements for remoted TROJAN systems, including streaming audio technologies.				
Title: Development of Satellite Communication (SATCOM) dishes and receivers Articles:		0.780 0	0.500 0	0.409
Description: Development of smaller more mobile Satellite Communication (SATCOM) dishes and receivers. Development of more efficient use of bandwidth, communications on the move and man-packable intelligence collection systems.				
FY 2012 Accomplishments: Developed smaller more mobile SATCOM dishes and receivers. Develop more efficient use of bandwidth, communications on the move and man-packable intelligence collection systems.				
FY 2013 Plans: Develop smaller more mobile SATCOM dishes and receivers. Develop more efficient use of bandwidth, communications on the move and man-packable intelligence collection systems.				
FY 2014 Plans: Will continue development of smaller more mobile SATCOM dishes and receivers and the development of more efficient use of bandwidth, communications on the move and man-packable intelligence collection systems; Super Quick Deploy SATCOM terminals that auto-acquire the spacecraft; and a Back-pack SATCOM system.				
Title: Labor cost software (SW) engineers Articles:		0.846 0	0.945 0	0.775

UNCLASSIFIED

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Description: Labor for two software (SW) engineers at NSA in support of GLAIVE and other above applicable efforts. Labor for one Material Developer (MAT DEV) technologist, one MAT DEV software and one MAT DEV Hardware (HW) engineer. FY 2012 Accomplishments: Labor for two SW engineers at NSA in support of GLAIVE and other above applicable efforts. Labor for one MAT DEV technologist, one MAT DEV software and one MAT DEV HW engineer. FY 2013 Plans: Labor for two SW engineers at NSA in support of GLAIVE and other above applicable efforts. Labor for one MAT DEV technologist, one MAT DEV software and one MAT DEV HW engineer. FY 2014 Plans: Continued labor for two SW engineers at NSA in support of GLAIVE and other above applicable efforts. Continued labor for one MAT DEV technologist, one MAT DEV software and one MAT DEV HW engineer.			
Accomplishments/Planned Programs Subtotals	3.914	4.232	3.465

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
• BA0326: <i>TROJAN (MIP)</i>	93.807	21.483	24.598		24.598	17.506	12.520	14.710	14.716	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
This Acquisition Strategy for the TROJAN Classic XXI and TROJAN NexGEN Systems supported by TROJAN RDT&E is to adapt and leverage from Commercial Off the Shelf (COTS) and Government Off the Shelf (GOTS) products. Additionally leverage off of development by DoD and other Government agencies to the greatest extent possible. TROJAN RDT&E is used to fund the development of enhancing these technologies to meet specific user requirements. The funding for production and fielding of these capabilities are funded under TROJAN BA0331.											
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.											

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army												DATE: April 2013			
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2040: Research, Development, Test & Evaluation, Army BA 5: System Development & Demonstration (SDD)								PE 0303032A: TROJAN - RH12 - MIP				RH5: TROJAN - RH12 - MIP			
Management Services (\$ 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
Labor Costs Software (SW) Engineers	Various	NSA:MD	0.000	0.844	Jun 2012	0.945	Jun 2013	0.775	Jun 2014	-		0.775	0.000	2.564	0.000
Subtotal			0.000	0.844		0.945		0.775		0.000		0.775	0.000	2.564	0.000
Product Development (\$ 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
Multi-Band Compression Algorithms	Various	APG:MD	0.000	0.358	Jun 2012	0.375	Jun 2013	0.307	Jun 2014	-		0.307	Continuing	Continuing	0.000
Develop Prototype Quick Reaction Capability Receiver	Various	APG:MD	0.000	0.400	Jun 2012	0.300	Jun 2013	0.245	Jun 2014	-		0.245	Continuing	Continuing	0.000
Integrate Direction Finding	Various	APG:MD	0.000	0.390	Jun 2012	0.950	Jun 2013	0.778	Jun 2014	-		0.778	Continuing	Continuing	0.000
Specialized Software Enhancements	Various	APG:MD	0.000	0.285	Jun 2012	0.300	Jun 2013	0.246	Jun 2014	-		0.246	Continuing	Continuing	0.000
Develop Satellite Communications (SATCOM) Dishes and Receivers	Various	APG:MD	0.000	0.780	Jun 2012	0.500	Jun 2013	0.409	Jun 2014	-		0.409	Continuing	Continuing	0.000
Develop Hardware/ Software Interface	Various	APG:MD	0.000	0.445	Jun 2012	-		-		-		-	0.000	0.445	0.000
Subtotal			0.000	2.658		2.425		1.985		0.000		1.985			0.000
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
Integration and Testing of Hardware/Software	Various	APG:MD	0.000	0.412	Jun 2012	0.862	Jun 2013	0.705	Jun 2014	-		0.705	0.000	1.979	0.000
Subtotal			0.000	0.412		0.862		0.705		0.000		0.705	0.000	1.979	0.000

UNCLASSIFIED

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	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	0.000	3.914		4.232		3.465		0.000		3.465			0.000

Remarks

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army																DATE: April 2013			
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2040: Research, Development, Test & Evaluation, Army								PE 0303032A: TROJAN - RH12 - MIP								RH5: TROJAN - RH12 - MIP			
BA 5: System Development & Demonstration (SDD)																			

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Hardware, Software and Systems Development	1	2014	4	2015