Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army										DATE: February 2012	
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*				R-1 ITEM NOMENCLATURE PE 0303032A: *TROJAN - RH12 - MIP*							
COST ($ in Millions)	**FY 2011**	**FY 2012**	**FY 2013 Base**	**FY 2013 OCO**	**FY 2013 Total**	**FY 2014**	**FY 2015**	**FY 2016**	**FY 2017**	**Cost To Complete**	**Total Cost**
Total Program Element	3.578	3.916	4.232	-	4.232	4.386	3.651	4.826	4.624	Continuing	Continuing
RH5: *TROJAN - RH12 - MIP*	3.578	3.916	4.232	-	4.232	4.386	3.651	4.826	4.624	Continuing	Continuing

Note

Change Summary Explanation: Adjustments to Budget Years generated by Congressional changes to President's Budget.

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.

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army					DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*		R-1 ITEM NOMENCLATURE PE 0303032A: *TROJAN - RH12 - MIP*			
B. Program Change Summary ($ in Millions)	**FY 2011**	**FY 2012**	**FY 2013 Base**	**FY 2013 OCO**	**FY 2013 Total**
Previous President's Budget	3.697	3.920	4.142	-	4.142
Current President's Budget	3.578	3.916	4.232	-	4.232
Total Adjustments	-0.119	-0.004	0.090	-	0.090
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-0.119	-0.004	0.090	-	0.090

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army			DATE: February 2012
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COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
RH5: *TROJAN - RH12 - MIP*	3.578	3.916	4.232	-	4.232	4.386	3.651	4.826	4.624	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

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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 2011	FY 2012	FY 2013
Title: Integrate and test specialized hardware/software	0.388	0.412	0.862
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 GLAIVE software. Integrated several new National Security Agency (NSA) SW packages.			
FY 2011 Accomplishments: Integrated and tested specialized hardware/software for classified pre-processing of new signals of interest utilizing enhanced signal processing algorithms. Resourced development of GLAIVE software. Integrated several new NSA SW packages.			
FY 2012 Plans:			

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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 2013 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 2011 Accomplishments:*** Acquired and applied multi-bandwidth compression algorithm technology to maximize TROJAN intelligence network throughput. ***FY 2012 Plans:*** Acquire and apply multi-bandwidth compression algorithm technology to maximize TROJAN intelligence network throughput. ***FY 2013 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.	0.336 0	0.358 0	0.375
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 2011 Accomplishments:*** Developed prototype quick reaction capability receiver packages for fixed and transportable TROJAN systems to acquire non-standard modulations using DSP and FPGAs. ***FY 2012 Plans:***	0.375 0	0.400 0	0.300

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Develop prototype quick reaction capability receiver packages for fixed and transportable TROJAN systems to acquire non-standard modulations using DSP and FPGAs. ***FY 2013 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 2011 Accomplishments:*** Integrated Direction Finding (DF) and geolocation technologies into TROJAN Remote Receiving Groups. ***FY 2012 Plans:*** Integrate Direction Finding (DF) and geolocation technologies into TROJAN Remote Receiving Groups. ***FY 2013 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).	0.367 0	0.390 0	0.950
Title: Develop hardware/software interface ***Articles:*** ***Description:*** Develop hardware/software interface for TCXXI system and NexGEN to ONEROOF storage system ***FY 2011 Accomplishments:*** Developed hardware/software interface for TCXXI system and NexGEN to ONEROOF storage system ***FY 2012 Plans:*** Complete development of hardware/software interface for TCXXI system and NexGEN to ONEROOF storage system	0.420 0	0.445 0	-
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.	0.270 0	0.285 0	0.300

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
FY 2011 Accomplishments: Developed specialized software enhancements to the TROJAN audio streaming subsystems to improve system redundancy and throughput capacity and system management capabilities; Investigated compression/processing technologies to reduce communications bandwidth requirements for remoted TROJAN systems, including streaming audio technologies. ***FY 2012 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 2013 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:*** ***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 2011 Accomplishments:*** Developed smaller more mobile SATCOM dishes and receivers. Developed more efficient use of bandwidth, communications on the move and man-packable intelligence collection systems. ***FY 2012 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 2013 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.	0.736 0	0.780 0	0.500
Title: Labor cost software (SW) engineers ***Articles:***	0.686 0	0.846 0	0.945

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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 2011 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 2012 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 2013 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	3.578	3.916	4.232

C. Other Program Funding Summary ($ in Millions)

N/A

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.