Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Army

Date: May 2017

Appropriation/Budget Activity

R-1 Program Element (Number/Name)

2040: Research, Development, Test & Evaluation, Army I BA 6: RDT&E

PE 0604256A I Threat Simulator Development

Management Support

COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
Total Program Element	-	27.157	25.675	22.862	-	22.862	23.885	24.658	25.297	25.954	-	-
976: Army Threat Sim (ATS)	-	27.157	25.675	22.862	-	22.862	23.885	24.658	25.297	25.954	-	-

A. Mission Description and Budget Item Justification

This Program Element (PE) supports the design, development, acquisition, integration and fielding of realistic mobile threat simulators and realistic threat simulation products utilized in Army training and developmental and operational tests. This PE originally funded simulators representing Soviet equipment, but scope was expanded to address emerging world threats. Army Threat Simulator and Threat Simulation products are utilized to populate test battlefields for United States (U.S.) Army Test and Evaluation Command (ATEC), to conduct developmental and operational tests, and to support Program Executive Office (PEO) required user testing in System Integration Laboratories and hardware/simulation in-the-loop facilities. Army threat simulator and threat simulation products developed or fielded under this PE support Army-wide, non-system specific threat product requirements. Each capability is pursued in concert and coordination with existing Army and tri-service capabilities to eliminate duplication of products and services, while providing the proper mix of resources needed to support Army testing and training. These battlefield simulators represent systems (e.g. missile systems, command, control and communications systems, electronic warfare systems, etc.) that are used to portray a realistic threat environment during testing of U.S. weapon systems. Simulator development is responsive to Office of the Secretary of Defense and Government Accountability Office guidance for the Army to conduct operational testing in a realistic threat environment. Actual threat equipment is acquired when appropriate (in lieu of development) and total package fielding is still required (i.e., instrumentation, operations and maintenance, manuals, new equipment training, etc.). Threat simulator development is accomplished under the auspices of the Project Manager for Instrumentation, Targets and Threat Simulators (PM ITTS) and the Director, Operational Test and Evaluation, Threat Simulator Investment Working Group.

B. Program Change Summary (\$ in Millions)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Previous President's Budget	27.535	25.675	21.232	-	21.232
Current President's Budget	27.157	25.675	22.862	-	22.862
Total Adjustments	-0.378	0.000	1.630	-	1.630
 Congressional General Reductions 	-	-			
 Congressional Directed Reductions 	-	-			
 Congressional Rescissions 	-	-			
 Congressional Adds 	-	-			
 Congressional Directed Transfers 	-	-			
Reprogrammings	-	-			
SBIR/STTR Transfer	-0.378	-			
 Adjustments to Budget Years 	0.000	0.000	1.555	-	1.555
CivPay Adjustments	0.000	0.000	0.075	-	0.075

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Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Army	Da	te: May 2017	
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army I BA 6: RDT&E Management Support	R-1 Program Element (Number/Name) PE 0604256A / Threat Simulator Development		
Congressional Add Details (\$ in Millions, and Includes General R	Reductions)	FY 2016	FY 2017
Project: 976: Army Threat Sim (ATS)			
Congressional Add: Integrated Threat Distributed Cyber Environments			-
	Congressional Add Subtotals for Project: 976	7.500	-
	Congressional Add Totals for all Projects	7.500	_

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Army								Date: May	2017			
Appropriation/Budget Activity 2040 / 6				,				Project (Number/Name) 976 I Army Threat Sim (ATS)				
COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
976: Army Threat Sim (ATS)	-	27.157	25.675	22.862	-	22.862	23.885	24.658	25.297	25.954	-	-
Quantity of RDT&E Articles	-	-	-	-	-	_	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project supports the design, development, acquisition, integration and fielding of realistic mobile threat simulators and realistic threat simulation products utilized in Army training and developmental and operational tests. Project originally funded simulators representing Soviet equipment, but scope was expanded to address emerging world threats. Army Threat Simulator and Threat Simulation products are utilized to populate test battlefields for United States (U.S.) Army Test and Evaluation Command (ATEC), to conduct developmental and operational tests, and to support Program Executive Office (PEO) required user testing in System Integration Laboratories and hardware/simulation in-the-loop facilities. Army threat simulator and threat simulation products developed or fielded under this Project support Army-wide, non-system specific threat product requirements. Each capability is pursued in concert and coordination with existing Army and tri-service capabilities to eliminate duplication of products and services, while providing the proper mix of resources needed to support Army testing and training. These battlefield simulators represent systems (e.g. missile systems, command, control and communications systems, electronic warfare systems, etc.) that are used to portray a realistic threat environment during testing of U.S. weapon systems. Simulator development is responsive to Office of the Secretary of Defense and General Accounting Office guidance for the Army to conduct operational testing in a realistic threat environment. Actual threat equipment is acquired when appropriate (in lieu of development) and total package fielding is still required (i.e., instrumentation, operations and maintenance, manuals, new equipment training, etc.). Threat simulator development is accomplished under the auspices of the Project Manager for Instrumentation, Targets and Threat Simulators (PM ITTS) and the Director, Operational Test and Evaluation, Threat Simulator Investment Working Group.

Beginning in FY 2018, this Project will support the Next Generation Mobile Communication Network Infrastructure Test Range (MCNITR) activity.

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2016	FY 2017	FY 2018
Title: Network Exploitation Test Tool (NETT).	3.410	3.883	3.675
Description: Continues Engineering Manufacturing and Development (EMD) for the NETT as a comprehensive Computer Network Operations (CNO) tool. Integrates new tools, tactics, and techniques into NETT to portray evolving Threat environments.			
FY 2016 Accomplishments: Continued EMD for the NETT. NETT will be a comprehensive CNO tool, designed for Test and Evaluation (T&E), to portray evolving hostile and malicious Threat effects within the cyber domain. The program provides an integrated suite of open-source/open-method exploitation tools, which will be integrated with robust reporting and instrumentation capabilities. NETT issued by Threat CNO teams to replicate the tactics of state and non-state Threat and will be supported by a robust CNO development environment. The Cyber domain will be the most rapidly changing domain in which our systems operate. The NETT program to research new capabilities and to use an in-depth process to clean, fix, and integrate required Threat tools, tactics, and techniques			

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: N	ay 2017		
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0604256A I Threat Simulator Development	Project (Number/Name) 976 I Army Threat Sim (ATS)			
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2016	FY 2017	FY 2018
that are needed during T&E. Focus areas to include continued Threat remote agent development.	integration, instrumentation, distributed collaboration,	and			
FY 2017 Plans: Will continue EMD for the NETT. NETT will be a comprehensive Component to portray evolving hostile and malicious Threat effects within the cyber open-source/open-method exploitation tools which will be integrated will be used by Threat CNO teams to replicate the tactics of state and development environment. The Cyber domain will be the most rapidly program will research these new capabilities and will use an in-depth tactics, and techniques that will be needed during T&E. Focus areas we distributed collaboration between multiple users, targets and attack vis	er domain. The program will provide an integrated suite with robust reporting and instrumentation capabilities. It non-state Threat and will be supported by a robust CI changing domain in which our systems operate. The process to clean, fix, and integrate required Threat too will include continued Threat integration, instrumentation	e of NETT NO NETT on,			
FY 2018 Plans: NETT is a comprehensive CNO tool, designed for T&E, to portray evo domain. The program will continue to provide an integrated suite of opintegrated with robust reporting and instrumentation capabilities. NET state and non-state Threat and is supported by a robust CNO develop rapidly changing domain in which our systems operate. The NETT pruse an in-depth process to clean, fix, and integrate required Threat too Focus areas include continued Threat integration, instrumentation, disattack visualization, data collection and remote agent development.	olving hostile and malicious Threat effects within the cyben-source/open-method exploitation tools which will be T is used by Threat CNO teams to replicate the tactics oment environment. The Cyber domain will be the most ogram will continue research of these capabilities and ols, tactics, and techniques that will be needed during	ber be of t will T&E.			
Title: Threat Systems Management Office's (TSMO) Threat Operation	ns		2.959	3.395	3.62
Description: TSMO's Threat Operations program manages, maintain within the Army's Threat inventory.	s, and sustains a mission ready suite of threat system	s			
FY 2016 Accomplishments: The Threat Operations program funded the operation, maintenance, no used to portray a realistic threat environment during Army testing and support multiple Army test events including (Network Integration Evaluanticipated excursion test events for numerous Systems Under Test (Fiscal Year (FY) 2017. FY16 funding provided for acquisition life cyclespares, new equipment, training, special tools and instrumentation, according to the control of the cyclespares.	training within the Army's Threat inventory in order to uation - NIE/Army Warfighter Assessments - AWA) and SUT)/Programs of Record (POR) currently identified the management support and operations, maintenance,	d			

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Army			Date: M	ay 2017	
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0604256A I Threat Simulator Development	_	ect (Number/Name) I Army Threat Sim (ATS)		
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2016	FY 2017	FY 2018
Assurance Certification and Accreditation Process (DIACAP) update inventory.	es, etc. of new threat systems fielded into the Army's Thr	eat			
FY 2017 Plans: The Threat Operations program will fund the operation, maintenance systems used to portray a realistic threat environment during Army to support multiple Army test events including (Network Integration anticipated excursion test events for numerous Systems Under Tes FY17.	testing and training within the Army's Threat inventory in Evaluation - NIE/Army Warfighter Assessments - AWA) a	and			
FY 2018 Plans: The Threat Operations program will fund the operation, maintenance systems used to portray a realistic threat environment during Army to support multiple Army test events including NIE/AWA and anticipidentified through FY18.	testing and training within the Army's Threat inventory in				
Title: Integrated Threat Force (ITF), formerly named Threat Battle (Command Center (TBCC)		3.823	1.965	_
Description: Continues the EMD phase for the ITF program to conintegration in support to the build-out of the threat force architecture		s			
FY 2016 Accomplishments: Continued the EMD phase for Increment 4 of the ITF program to en Command, Control, Communication (C3) interfaces with the Increm Control (C2) functionality of the TBCC. FY16 supported the continuthe TBCC.	ent 1 - 3 threat systems as well as enhance the Comman	nd and			
FY 2017 Plans: Will continue the EMD phase for Increment 4 of the ITF program to C3 interfaces with the Increment 1 - 3 threat systems as well as enternance (TBCC). FY17 funding is expected to finish the design and for Increment 4.	nance the C2 functionality of the Threat Battle Command				
Title: Threat Computer Network Operations Teams (TCNOT)			3.003	4.051	5.76
Description: The TCNOT supports Army Test and Evaluation even and certified CNO professionals who execute cyber operations again					

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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2016	FY 2017	FY 2018
designated a "Threat CNO Team" under Army Regulation (AR) 380 (USSTRATCOM)/National Security Agency (NSA) certified "Red Total Control of the		nand			
FY 2016 Accomplishments: Funding supported unique training, credentials, and authorizations Command (INSCOM), NSA, Headquarters Department of Army (H continued research of the intelligence-based TCNO TTP and threa of the necessary, highly specialized TCNO Training program; development capabilities; and data collection capability.	QDA)-G2, and industry. FY16 funded requirements such at portrayal capabilities up to the Nation State level; develo	as opment			
FY 2017 Plans: Funding will support unique training, credentials, and authorization and industry. FY17 will fund requirements such as continued researcapabilities up to the Nation State level; development of the necess research, and analysis of continually emerging foreign threat capal	arch of the intelligence-based TCNO TTP and threat portra sary, highly specialized TCNO Training program; develop	ayal			
FY 2018 Plans: Funding will support unique training, credentials, and authorization and industry. FY18 will fund requirements such as continued researcapabilities up to the Nation State level; development of the necess research, and analysis of continually emerging foreign threat capal	arch of the intelligence-based TCNO TTP and threat portra sary, highly specialized TCNO Training program; develop	ayal			
Title: Threat Computer Network Operations (CNO) Fidelity Enhance	cements		1.312	1.333	1.40
Description: Threat CNO Fidelity Enhancements establishes high techniques, and procedures of Threat employment of CNO using complex U.S. operations.		age			
FY 2016 Accomplishments: Program continued to validate high-fidelity Threat malware and rea employment of CNO using commercial IT technologies intended to of state and non-state threat targeting packages that are "current", of sophistication, and threat training that will not be available to eva Business Systems and network enabled systems. These threat page 1.	engage complex U.S. operations. Continued the develop accurately profiling attack trends and timelines, intent, levaluate the exploitation of existing vulnerabilities in Enterpr	ment els			

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: M	ay 2017		
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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2016	FY 2017	FY 2018
autonomously to state level forces using both active and passive no Control, Communications, Computers, Intelligence, Surveillance are					
FY 2017 Plans: Program will continue to validate high-fidelity Threat malware and remployment of CNO using commercial IT technologies intended to state and non-state threat targeting packages that are "current", ac of sophistication, and threat training that will not be available to eva Business Systems and network enabled systems. These threat pa autonomously to state level forces using both active and passive no Enterprise Business Systems.	engage complex U.S. operations. Will continue to devel curately profiling attack trends and timelines, intent, level aluate the exploitation of existing vulnerabilities in Enterpreckages range from "technological nomads" operating	op s ise			
FY 2018 Plans: Program will continue to validate high-fidelity Threat malware and remployment of CNO using commercial IT technologies intended to state and non-state threat targeting packages that are "current", act of sophistication, and threat training that will not be available to evaluations. Systems and network enabled systems. These threat parautonomously to state level forces using both active and passive not enterprise Business Systems.	engage complex U.S. operations. Will continue to devel curately profiling attack trends and timelines, intent, level aluate the exploitation of existing vulnerabilities in Enterpreckages range from "technological nomads" operating	op s ise			
Title: Advanced Networked Electronic Support Threat Sensors (NE	STS)		2.392	4.701	2.50
Description: Program will begin prototype design and implementa threat Electronic Support (ES) platforms.	tion to deliver advanced				
FY 2016 Accomplishments: The Advanced NESTS program will increase existing threat ES cap performance assessments of real-world threat capabilities. This protargeting advanced U.S. communication systems operating up to 1 integration effort.	ogram seeks to replicate emerging real-world threat capa				
FY 2017 Plans: The Advanced NESTS program will continue to increase existing the Intelligence Community performance assessments of real-world the					

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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2016	FY 2017	FY 2018
real-world threat capabilities targeting advanced U.S. communication sydetailed design and the integration effort.	ystems operating up to 18GHz. Program will continu	e the			
FY 2018 Plans: The Advanced NESTS program will continue to increase existing threat performance assessments of real-world threat capabilities. This program targeting advanced U.S. communication systems operating up to 18GH integration effort. The program will pursue Full Operational Capability (m seeks to replicate emerging real-world threat capa dz. Program will continue the detailed design and the	bilities			
Title: Advanced Jammer Suite (Next Generation Electronic Attack (EA)))		1.758	4.394	3.000
Description: Begin development of the infrastructure and testing capacinetwork environments and expertise needed to accurately characterize cyber capabilities. Enables ability to provide cyber attack capabilities from the expertise of the exp	et, plan, and assess the effects of both U.S. and advertion a realistic threat environment. The atives for Electronic Attack (EA) in a test environment and Global Positioning System (GPS) jamming. See in testing, at lower test costs. The Advanced James appropriate jamming techniques for the applied testing advelop new and future jamming threats, to include limited to, techniques such as Frequency Follower Diquency Modulation (DRFM) "spoofing;" and, extended	t mer g			
FY 2017 Plans: The Advanced Jammer Suite expands the Army's open air and alternat jamming to include direct jamming, open air jamming and GPS jamming an asset to the Army for use in testing, at lower test costs. The Advance test environment by using appropriate jamming techniques for the appli representation for the Army in the jamming domain. This program will c well as develop new and future jamming threats, to include satellite jam is not limited to techniques such as Frequency Follower Direct Sequence Frequency Modulation (DRFM) "spoofing;" and, extended RF range into FY 2018 Plans:	g. This program will keep the current jamming threat ced Jammer Suite expands the Army alternative EA is ied testing environment. This program continues the continue to procure upgraded injection jamming units arming threats. This threat development would include Spread Spectrum (DSSS) threat jamming; Digital	as n a threat as e, but			

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Army Date: May 2017						
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0604256A / Threat Simulator Development		oject (Number/Name) S I Army Threat Sim (ATS)			
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2016	FY 2017	FY 2018	
The Advanced Jammer Suite will continue to expand the Army's opvariations of jamming to include direct jamming, open air jamming an asset to the Army for use in testing, at lower test costs, and expappropriate jamming techniques for the applied testing environmen Army in the jamming domain. This program will develop new and fudevelopment would include, but is not limited to, techniques such a and, extended RF range into the EHF range.	and GPS jamming. It will keep the current jamming threat ands the Army alternative EA in a test environment by us it. This program continues the threat representation for the uture jamming threats, to include satellite jamming. This t	t as ing e hreat				
Title: Threat Information Environment			1.000	-	-	
Description: Begin development of the infrastructure and testing contwork environments and expertise needed to accurately character cyber capabilities. Enables ability to provide cyber attack capabilities. FY 2016 Accomplishments: This capability provided the infrastructure and testing capacity for representative environments and expertise and the means to accurately adversaries. This program leveraged partnerships across the U.S. Operations Command (1st IO CMD), the Research, Development, Laboratory (ARL), and the Aviation/Missile Research and Development, and the Aviation in Army systems would be both common and substitution in Army systems would be both common and substitutions.	erize, plan, and assess the effects of both U.S. and adverses from a realistic threat environment. outine and consistent portrayal of operationally realistic, the rately characterize, plan, and assess the effects of cyber Army Cyber Command (ARCYBER)/ the1st Information and Engineering Command (RDECOM)/ the Army Reseatment Center (AMRDEC) to ensure intellectual capital and be through this program due to corrected vulnerabilities ar	hreat				
Title: Threat Battle Command Force (TBCF)			-	1.953	2.23	
Description: The Threat Battle Command Force (TBCF) incorpora Threat tactics, techniques, and procedures (TTP) during T&E and t		g valid				
FY 2017 Plans: The Threat Battle Command Force (TBCF) incorporates remote op tactics, techniques, and procedures (TTP) during T&E and training Electronic Support Suite, Next Generation Electronic Attack Suite a operations. FY 2018 Plans:	events. This program will integrate the Next Generation					

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2016	FY 2017	FY 2018	
Integrate the Next Generation Electronic Support Suite, Next Geoperations into future Threat C2 operations.	eneration Electronic Attack Suite and Computer Network				
Title: Next Generation Mobile Communication Network Infrastru	-	-	0.657		
Description: Next Generation MCNITR provides a mobile, dyna implementing multiple technologies capable of providing a realistraining of U.S. forces in urban and suburban battle space environability that simulates real-world RF signals environment and enabled devices dependent on advanced cellular technology.	stic commercial RF signals environment needed for testing a conments. The Next Generation MCNITR program acquires a	nd I			
FY 2018 Plans: Will determine system functional requirements to full design spe	cifications to meet threat and operational test requirements.				
	Accomplishments/Planned Programs Sul	ototals 19.657	25.675	22.862	

	FY 2016	FY 2017
Congressional Add: Integrated Threat Distributed Cyber Environments	7.500	-
FY 2016 Accomplishments: Development of these provisions enabled real-time cyber causality assessment against the realistic cyber threat environment while retaining the ability to rapidly reconfigure required environments as the cyber threat adapts and proliferates. This capability utilized automated configuration and control of threat cyber environment operations in order to meet current demands. This capability is a solution to existing challenges of implementing, sustaining, and reconfiguring actual foreign network technology to replicate threat cyber environment requirements.		
Congressional Adds Subtotals	7.500	-

C. Other Program Funding Summary (\$ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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