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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army **Date:** February 2015

Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604780A / Combined Arms Tactical Trainer (CATT) Core							
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	26.720	34.712	21.622	-	21.622	30.692	28.008	32.014	35.056	Continuing	Continuing
571: Close Cbt Tact Trainer	-	0.805	0.815	0.749	-	0.749	1.138	1.090	0.994	0.992	Continuing	Continuing
577: Gaming Technology In Support Of Army Training	-	2.047	1.768	2.999	-	2.999	2.562	2.515	2.351	2.356	Continuing	Continuing
582: Synthetic Envir Core	-	20.169	20.464	16.658	-	16.658	20.680	18.552	20.916	26.118	Continuing	Continuing
585: Aviation Combined Arms Tactical Trainer	-	3.699	11.665	1.216	-	1.216	6.312	5.851	7.753	5.590	Continuing	Continuing

Note

Change Summary Explanation: Synthetic Environment (SE) Core is required to generate Terrain Databases for constructive simulation and gaming requirements in support of Army training. SE Core received a Congressional reduction (-7.7 million) in FY15. FY16 Budget adjustment received to achieve requirements.

A. Mission Description and Budget Item Justification

The Combined Arms Tactical Trainers (CATT) represent a family of combined arms simulation systems designed to support the Army's simulation-based, Combined Arms Training Strategy. CATT enables units, from crew to the battalion task force level, to conduct a wide variety of combat tasks on a realistic, interactive, synthetic battlefield. CATT's combination of manned simulators and staff officer workstations enables units to train as a combined arms team in a cost effective manner. The primary CATT system is the Close Combat Tactical Trainer (CCTT) which provides the underlying baseline architecture and After Action Review (AAR) for CATT expansions, Pre-Planned Product Improvements (P3I) and system enhancements. The Reconfigurable Vehicle Simulator (RVS) and the Dismounted Soldier Training System (DSTS) variants support combat convoy operations and Improvised Explosive Devices (IED) tasks. Synthetic Environment (SE) Core provides for the expansion of the synthetic environment baseline to include enhanced interoperability and the products and infrastructure to support current and future combat operations and mission rehearsal required for Unified Land Operations. The first synthetic environments expanded were in the Aviation Combined Arms Tactical Trainer (AVCATT) and the CCTT for both the Active and Reserve components. Gaming Technology provides an application to train and rehearse convoy-operations, platoon level, mounted infantry tactics, dismounted operations, rules-of-engagement training, cross-cultural communications training, IED defeat training, route clearance, ground-air coordination, Unmanned Aerial Vehicle (UAV) integration, and other small unit and individual training and mission rehearsal requirements. Soldiers can train in a common environment on geotypical or geospecific virtual terrain. It is also possible to link Gaming technology to actual communication, command, control, computer, and intelligence (C4I) systems and other CATT simulation systems to increase the utility and realism of the training. By practicing skills in CATT, units are able to effectively prepare for costly live fire and maneuver exercises, as well as training tasks deemed too hazardous to conduct in a live training environment. Fielded in both fixed site and mobile versions, CATT enables both Active and Reserve component units to prepare for real world contingency missions. By being able to use a wide array of training terrain databases and modify the behavior of the computer generated opposing forces, CATT offers an unlimited array of training options to support the Army's many regional combat missions. The combination of tough field and live fire training, and realistic simulation training in CATT, is the formula to prepare Soldiers and their Leaders for the uncertainties they face in combat operations.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army			Date: February 2015			
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0604780A / Combined Arms Tactical Trainer (CATT) Core				
FY 2016 core funding of \$.749 million for CCTT enables gaming technology and visualization for maneuver training, and the P3I for the CCTT, to include virtualization and other Better Buying Power in order to reduce life cycle costs.						
FY 2016 base funding of \$2.999 million for Games for Training will provide for modifications to the Games for Training (GFT) system to ensure compliance with the Live, Virtual, Constructive/Integrated Training Environment (LVC-ITE) in support of Unified Land Operations. It will also integrate new commercial and Government technology products into the current gaming system.						
FY 2016 base funding of \$16.658 million will continue the efforts of providing expanded development of the capability to produce common terrain databases. FY 2016 funds will modify the Terrain Development process to include constructive terrain databases, continue to enhance OneSAF in the SE Core Architecture and generate databases for constructive simulation and gaming. Maintaining OneSAF for virtual simulations enables interoperability with the Live, Virtual, Constructive Integrated Training Environment (LVC ITE) and is a cost avoidance for individual virtual simulators in that they that do not develop and maintain separate Semi-Automated Forces (SAFs). SE Core will continue to upgrade, integrate and refine the Common Virtual Components, and continue to develop common visual models and transportation networks.						
FY 2016 base funding of \$1.216 million will complete the development and testing the Voice Communication System capability. The required software will allow Army Aviators to properly communicate to internal and external entities in support of Aviation Collective Training Tasks.						
B. Program Change Summary (\$ in Millions)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget		27.619	42.430	18.267	-	18.267
Current President's Budget		26.720	34.712	21.622	-	21.622
Total Adjustments		-0.899	-7.718	3.355	-	3.355
• Congressional General Reductions		-	-0.018			
• Congressional Directed Reductions		-	-7.700			
• Congressional Rescissions		-	-			
• Congressional Adds		-	-			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-	-			
• SBIR/STTR Transfer		-0.899	-			
• Adjustments to Budget Years		-	-	3.355	-	3.355

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604780A / Combined Arms Tactical Trainer (CATT) Core				Project (Number/Name) 571 / Close Cbt Tact Trainer			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
571: Close Cbt Tact Trainer	-	0.805	0.815	0.749	-	0.749	1.138	1.090	0.994	0.992	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
The Close Combat Tactical Trainer (CCTT) immersively and comprehensively trains Armor, Cavalry, Infantry, Mechanized Infantry, and Armored Reconnaissance units from squad through Battalion/Squadron level, to include their staffs. The primary training audience operates from full-crew simulators, reconfigurable command posts, and live battalion command posts to accomplish their combined arms training tasks. CCTT is a ground based, collective training device composed of three systems: the CCTT, the Reconfigurable Vehicle Tactical Trainer (RVTT), and the Dismounted Soldier Training System (DSTS). CCTT is comprised of full fidelity, manned simulators for the M1 Abrams main battle tank, M2 Bradley Fighting Vehicles (BFV) variants, M3 Cavalry Fighting Vehicles (CFV), and the High Mobility, Multipurpose, Wheeled Vehicle (HMMWV). RVTT is a CCTT Reconfigurable Vehicle Simulator (RVS) comprised of full fidelity, manned simulators for the HMMWV and Heavy Expanded Mobility Tactical Truck (HEMTT). DSTS is a virtual trainer providing an ability to immerse the individual soldier into the synthetic virtual environment.												
FY 2016 core funding of \$.749 million for CCTT enables gaming technology and visualization for maneuver training, and the P3I for the CCTT, to include virtualization and other Better Buying Power initiatives in order to reduce life cycle costs.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2014	FY 2015	FY 2016	
Title: Government Program Management for the Close Combat Tactical Trainer (CCTT) program.									0.165	0.157	0.159	
Description: Government Program Management for the CCTT program.												
FY 2014 Accomplishments: Supported government program management, engineering, technical, contracting support, and continued operational evaluation support.												
FY 2015 Plans: Supports government program management, engineering, technical, contracting support, and continues operational evaluation support.												
FY 2016 Plans: Will support government program management, engineering, technical, contracting support, and will continue operational evaluation support.												
Title: Engineering and Manufacturing Development (EMD) phase contract activity for CCTT, DSTS and Interoperability between CCTT and DSTS.									0.640	0.658	0.590	

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604780A / <i>Combined Arms Tactical Trainer (CATT) Core</i>				Project (Number/Name) 571 / <i>Close Cbt Tact Trainer</i>				
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2014	FY 2015	FY 2016
Description: Continue EMD phase contract activities for CCTT and DSTS.												
FY 2014 Accomplishments: Enabled the integration of gaming technology into CCTT in support of maneuver training for Armor Brigade Combat Teams.												
FY 2015 Plans: Enables the integration of gaming technology into CCTT in support of maneuver training for Armor Brigade Combat Teams.												
FY 2016 Plans: Will enable the integration of gaming technology into CCTT in support of maneuver training for Armor Brigade Combat Teams.												
Accomplishments/Planned Programs Subtotals										0.805	0.815	0.749
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost	
• OPA3, Appropriation NA0170: OPA3, Appropriation NA0170	33.197	13.406	45.210	-	45.210	44.744	46.195	47.571	51.684	Continuing	Continuing	
• OMA, Appropriation 121018000: OMA, Appropriation 121018000	1.478	-	2.687	-	2.687	2.960	3.246	3.660	3.906	Continuing	Continuing	
Remarks The RDT&E efforts are essential to provide enhancements for the hardware and software of the program to meet warfighter mission priorities and validated requirements. These enhancements, after proper testing, will be procured and fielded with the programs procurement funds.												
D. Acquisition Strategy Acquisition Strategy FY 2016 will enable military gaming technology research for maneuver training and Pre-Planned Product Improvements (P3I) using Better Buying Power to reduce life cycle costs and open architecture interoperability across CCTT interfaces to other training capabilities.												
E. Performance Metrics N/A												

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army													Date: February 2015		
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604780A / <i>Combined Arms Tactical Trainer (CATT) Core</i>				Project (Number/Name) 571 / <i>Close Cbt Tact Trainer</i>					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Program Management	Various	PEO STRI : Orlando, FL	17.260	0.165		0.157		0.159		-		0.159	Continuing	Continuing	Continuing
Subtotal			17.260	0.165		0.157		0.159		-		0.159	-	-	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CCTT Post Deployment Software Support	C/T&M	AVT Simulation : Orlando, FL	0.000	0.640	Aug 2014	0.658	Mar 2015	0.590	Mar 2016	-		0.590	-	1.888	-
Subtotal			0.000	0.640		0.658		0.590		-		0.590	-	1.888	-
			Prior Years	FY 2014	FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals			17.260	0.805		0.815		0.749		-		0.749	-	-	-
Remarks															

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Appropriation/Budget Activity
2040 / 5

R-1 Program Element (Number/Name)
PE 0604780A / *Combined Arms Tactical Trainer (CATT) Core*

Project (Number/Name)
571 / Close Cbt Tact Trainer

Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
P3I in Support of Gaming Technology for Maneuver Training																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604780A / <i>Combined Arms Tactical Trainer (CATT) Core</i>	Project (Number/Name) 571 / <i>Close Cbt Tact Trainer</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
P3I in Support of Gaming Technology for Maneuver Training	2	2015	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604780A / Combined Arms Tactical Trainer (CATT) Core				Project (Number/Name) 577 / Gaming Technology In Support Of Army Training			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
577: Gaming Technology In Support Of Army Training	-	2.047	1.768	2.999	-	2.999	2.562	2.515	2.351	2.356	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Note Not applicable for this item.												
A. Mission Description and Budget Item Justification The Games for Training (GFT) Program prepares Soldiers and leaders for full-spectrum military operations in Unified Land Operations (ULO) with robust training and mission rehearsal capabilities. The GFT program satisfies the Active, the National Guard, and the Army Reserves' educational requirements in the Operational, Institutional, and Self-Development Training Domains with a low-overhead, flexible, persistent training capability on geo-specific and geo-typical terrain that is relevant with all military platforms and weapon systems. GFT comprehensively trains Platoon and below formations. GFT trains higher echelon units and staffs without troops. FY2016 base funding of \$2.999 million will integrate the GFT flagship product into the Live, Virtual, Constructive/Integrated Training Environment (LVC-ITE). It will also integrate new commercial and government technology products into the current gaming system.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2014	FY 2015	FY 2016	
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Games for Training (GFT) program. Description: Continue EMD phase contract activities for the GFT program. FY 2014 Accomplishments: Funding provides modifications to the GFT system that ensured compliance with the Live, Virtual Constructive - Integrated Architecture (LVC-IA) in support of Unified Land Operations (ULO). FY 2015 Plans: Funding integrates the flagship product into the LVC-IA. It also integrates new commercial and government technology products into the current gaming system. FY 2016 Plans: Funding will provide modifications to the GFT system to ensure compliance with the LVC-IA in support of ULO. It will also integrate new commercial and Government technology products into the current Gaming System.									1.681	1.444	2.669	
Title: Government Program Management for the GFT program. Description: Government Program Management for the GFT program.									0.366	0.324	0.330	

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army								Date: February 2015			
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604780A / <i>Combined Arms Tactical Trainer (CATT) Core</i>				Project (Number/Name) 577 / <i>Gaming Technology In Support Of Army Training</i>			
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2014	FY 2015	FY 2016	
<i>FY 2014 Accomplishments:</i> Government program management, engineering, technical, contract and test activities provided fielding, integration of software and web hosted support to Soldier tactical training.											
<i>FY 2015 Plans:</i> Government program management, engineering, technical, contract and test activities provides fielding, integration of software and web hosted support to Soldier tactical training.											
<i>FY 2016 Plans:</i> Government contract and test activites, will provide integration of software, fielding, and web hosted support to U.S. Army Soldier tactical training.											
Accomplishments/Planned Programs Subtotals								2.047	1.768	2.999	
C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u> <u>Base</u>	<u>FY 2016</u> <u>OCO</u>	<u>FY 2016</u> <u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• OPA 3: OPA 3, Appropriation NA0176 Gaming Technology in Support of Army Training	9.955	10.165	9.793	-	9.793	12.842	13.514	15.789	16.205	Continuing	Continuing
Remarks											
Funding provides modifications to the GFT system to ensure compliance with the LVC-ITE in support of ULO. It will also integrate new commercial and Government technology products into the current Gaming System.											
D. Acquisition Strategy											
A combination of the transition of Government off the shelf and Commercial off the shelf products coupled with competitive contracting using the existing requirements documents and annual concurrency upgrades to models, terrain and software.											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604780A / <i>Combined Arms Tactical Trainer (CATT) Core</i>						Project (Number/Name) 577 / <i>Gaming Technology In Support Of Army Training</i>			
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Program Management	Various	PEO STRI : Orlando, FL	0.937	0.366		0.324		0.330		-		0.330	Continuing	Continuing	Continuing
Subtotal			0.937	0.366		0.324		0.330		-		0.330	-	-	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Games for Training	Various	PEO STRI : Orlando, FL	3.574	1.681	Jun 2014	1.444	Jun 2015	2.669	Jun 2016	-		2.669	Continuing	Continuing	Continuing
Subtotal			3.574	1.681		1.444		2.669		-		2.669	-	-	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			4.511	2.047		1.768		2.999		-		2.999	-	-	-
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army

Date: February 2015

Appropriation/Budget Activity

2040 / 5

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PE 0604780A / Combined Arms Tactical Trainer (CATT) Core

Project (Number/Name)	Start Date	End Date	Status	Manager	Budget (USD)	Actual Cost (USD)	Progress (%)	Risk Level	Notes
P001 - New Product Launch	2023-01-15	2023-06-30	Completed	J. Doe	1,200,000	1,150,000	100	Low	Exceeded budget by 4.2%
P002 - Website Redesign	2023-02-01	2023-05-15	In Progress	A. Smith	450,000	480,000	75	Medium	Minor budget overrun
P003 - Marketing Campaign Q3	2023-07-01	2023-09-30	Planned	M. Johnson	300,000	0	0	Low	On hold until Q3
P004 - IT System Upgrade	2023-03-10	2023-12-31	On Hold	K. Lee	800,000	0	0	High	Waiting for vendor
P005 - Customer Service Training	2023-04-01	2023-07-31	Completed	S. Brown	150,000	145,000	100	Low	Successful completion
P006 - Research & Development	2023-01-01	2024-03-31	In Progress	D. White	2,500,000	2,200,000	60	Medium	Long-term project
P007 - HR Policy Review	2023-05-01	2023-08-31	Completed	L. Green	75,000	70,000	100	Low	Policy updated
P008 - Sales Team Expansion	2023-06-01	2023-11-30	In Progress	R. Black	600,000	550,000	80	Medium	Hiring new staff
P009 - Compliance Audit	2023-08-01	2023-10-31	Planned	T. Grey	200,000	0	0	Low	Annual requirement
P010 - Logistics Optimization	2023-09-01	2024-01-31	Planned	C. Pink	350,000	0	0	Medium	Process improvement

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604780A / <i>Combined Arms Tactical Trainer (CATT) Core</i>	Project (Number/Name) 577 / <i>Gaming Technology In Support Of Army Training</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
LVC-ITE and other product integration into GFT	1	2010	4	2020
Flagship Verification Testing	4	2013	4	2020
Software Development and Integration	1	2016	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604780A / Combined Arms Tactical Trainer (CATT) Core				Project (Number/Name) 582 / Synthetic Envir Core			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
582: Synthetic Envir Core	-	20.169	20.464	16.658	-	16.658	20.680	18.552	20.916	26.118	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
<p>This project supports the Synthetic Environment Core (SE Core) Program. SE Core's mission is to ensure the Army's training systems and simulators are integrated and interoperable in support of U.S. Army Readiness. SE Core provides virtual simulators with visual models (buildings and vehicles), terrain (over which the simulator moves), and entity behaviors (models performing realistic and appropriate actions such as movement and weapon effects) that are relevant and realistic to Unified Land Operations. The result is a "Fair Fight" capability; no simulator or operator will have an inherent advantage over another. Fair Fight allows for air and ground to have coordinated and integrated training events that accurately replicate combat operations. Additionally, SE Core is building the Army's Common Virtual Environment (CVE) that provides the linkage between simulators and establishes a common environment for interoperability, allowing various simulators to be linked together for a train-as-we-fight capability. SE Core is a foundational element in the Integrated Training Environment linking the embedded systems, multi-mode Live, Virtual, Constructive, Gaming (LVCG) training capability with current systems.</p>												
<p>The SE Core components are Virtual One Semi-Automated Forces (OneSAF) integration; terrain database production; common visual models; virtual systems architecture; a dynamic environment; and mission command development. A major SE Core component is the Standard Terrain Database Generation Capability (STDGC) process used to produce the synthetic terrain used in simulators and simulations. This terrain is a key component for virtual simulators and constructive simulations and will meet the demands of today's and future simulations.</p>												
<p>FY 2016 base funding of \$16.658 million will continue the efforts of providing expanded development of the capability to produce common terrain databases. FY 2016 funds will modify the Terrain Development process to include constructive terrain databases, continue to enhance OneSAF in the SE Core Architecture and generate databases for constructive simulation and gaming. Maintaining OneSAF for virtual simulations enables interoperability with the Live, Virtual, Constructive Integrated Training Environment (LVC ITE) and is a cost avoidance for individual virtual simulators in that they that do not develop and maintain separate Semi-Automated Forces (SAFs). SE Core will continue to upgrade, integrate and refine the Common Virtual Components, and continue to develop common visual models and transportation networks.</p>												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2014	FY 2015	FY 2016	
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Synthetic Environment Core (SE Core) program.									18.351	16.883	13.017	
Description: Continue EMD phase contract activities for the SE Core program.												
FY 2014 Accomplishments:												

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Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604780A / Combined Arms Tactical Trainer (CATT) Core				Project (Number/Name) 582 / Synthetic Envir Core			
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2014	FY 2015	FY 2016
Provided expansion of the production capability to meet the growing demand for synthetic terrain for training including constructive simulations. Efforts to improve interoperability across simulators and simulations continue. FY 2015 Plans: Provides expansion of the production capability to meet the growing demand for synthetic terrain for training, including constructive simulations and Regionally Aligned Forces (RAF). Efforts to improve interoperability across simulators and simulations continue. FY 2016 Plans: Increment 2 will provide expansion of the production capability to meet the demand for synthetic terrain for training including constructive simulation and gaming. Efforts to improve interoperability across simulators and simulations continue to include transportation networks.											
Title: Government Program Management for the Synthetic Environment Core (SE Core) program. Description: Government Program Management for the SE Core program. FY 2014 Accomplishments: Provided program management, engineering and technical oversight, contract support, and travel for Subject Matter Experts for the development of SE Core. FY 2015 Plans: Provides program management, engineering and technical oversight, contract support, and travel for support of site surveys and Subject Matter Experts for the development of SE Core. FY 2016 Plans: Will provide program management, engineering and technical oversight, contract support, and travel for support of site surveys and Subject Matter Experts for the development of SE Core. Will provide acquisition management for the solicitation and evaluation for a new SE Core contract award.									1.818	3.581	3.641
Accomplishments/Planned Programs Subtotals									20.169	20.464	16.658
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• OMA, Appropriation, 121014000: OMA, Appropriation 121014000, TBWG	9.982	14.512	16.366	-	16.366	7.838	8.973	9.294	9.301	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015	
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604780A / <i>Combined Arms Tactical Trainer (CATT) Core</i>				Project (Number/Name) 582 / <i>Synthetic Envir Core</i>			
C. Other Program Funding Summary (\$ in Millions)											
			<u>FY 2016</u>	<u>FY 2016</u>	<u>FY 2016</u>					<u>Cost To</u>	
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Base</u>	<u>OCO</u>	<u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Complete</u>	<u>Total Cost</u>
Remarks											
D. Acquisition Strategy											
The government awarded a cost plus fixed fee (CPFF) to Leidos in August 2011 with a period of performance start date of December 2011. Leidos was formerly known as Science Applications International Corporation (SAIC). This contract has a one-year base with four one-year options. The government exercised the first option in December 2012, the second option in December 2013 and the third option in December 2014. The government continues to evaluate the contractor's performance and fully expect to exercise the fourth option in December 2015.											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604780A / Combined Arms Tactical Trainer (CATT) Core				Project (Number/Name) 582 / Synthetic Envir Core					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Management Services	Various	Various : Various	3.622	-		-		-		-		-	-	3.622	3.622
Government Program Management Support	Various	PEO STRI : Orlando, FL	18.971	1.818		3.581		3.641		-		3.641	Continuing	Continuing	Continuing
Subtotal			22.593	1.818		3.581		3.641		-		3.641	-	-	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Technology Development - Architecture and Integration	C/CPFF	SAIC : Orlando, FL	6.946	-		-		-		-		-	-	6.946	6.946
Technology Development -Architecture and Integration	C/CPFF	SAIC : Orlando, FL	50.785	-		-		-		-		-	-	50.785	50.785
Technology Development -Database Virtual Environment Development	C/CPFF	CAE, USA : Orlando, FL	56.179	-		-		-		-		-	-	56.179	56.179
Technology Development- Common Virtual Environment & Management	C/CPFF	SAIC : Orlando, FL	18.192	18.351	Dec 2013	16.883	Dec 2014	13.017	Dec 2015	-		13.017	Continuing	Continuing	Continuing
Subtotal			132.102	18.351		16.883		13.017		-		13.017	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Technology Development - Test Support	Various	Test Community : Various	0.125	-		-		-		-		-	-	0.125	0.125
Subtotal			0.125	-		-		-		-		-	-	0.125	0.125

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604780A / <i>Combined Arms Tactical Trainer (CATT) Core</i>					Project (Number/Name) 582 / <i>Synthetic Envir Core</i>					
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Remarks Not Applicable															
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			154.820	20.169		20.464		16.658		-		16.658	-	-	-
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army

Date: February 2015

Appropriation/Budget Activity

2040 / 5

R-1 Program Element (Number/Name)

PE 0604780A / Combined Arms Tactical
Trainer (CATT) Core

Project (Number/Name)

582 / Synthetic Envir Core

[illegible]

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604780A / <i>Combined Arms Tactical Trainer (CATT) Core</i>	Project (Number/Name) 582 / <i>Synthetic Envir Core</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Increment 2	4	2013	4	2016
Increment 3	1	2017	4	2020
Program Management	4	2013	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604780A / Combined Arms Tactical Trainer (CATT) Core				Project (Number/Name) 585 / Aviation Combined Arms Tactical Trainer			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
585: Aviation Combined Arms Tactical Trainer	-	3.699	11.665	1.216	-	1.216	6.312	5.851	7.753	5.590	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
The Aviation Combined Arms Tactical Trainer (AVCATT) is Army Aviation's only Collective Training Program of Record for Active, Reserve and Army National Guard Aviation Units. AVCATT enables unit collective and combined arms air-ground training for AH-64, UH-60, CH-47, and OH-58 aircrews within the Live, Virtual, Constructive, & Gaming (LVC-G) Integrated Training Environment (ITE). The AVCATT also supports the training of Non-Rated crew members in crew coordination, flight, aerial gunnery, hoist and slingload related tasks via the Non-Rated Crew Member Manned Module (NCM3); which can be linked to AVCATT's UH-60 and CH-47 cockpit configurations to support a unit's specific Mission Training Requirements.												
FY 2016 base funding of \$1.216 million will complete the development and testing of the Voice Communication System capability. The required software will allow Army Aviators to properly communicate to internal and external entities in support of Aviation Collective Training Tasks.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2014	FY 2015	FY 2016	
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Aviation Combined Arms Tactical Trainer (AVCATT) program.									3.699	11.665	1.216	
Description: Continue EMD phase contract activities for the AVCATT program.												
FY 2014 Accomplishments: Designed new capabilities to enhance training when using the AVCATT and NCM3 in combined mode, including improved communications, hoist operations, slingload operations, and visual system realism improvements. Developed aerial gunnery training capabilities in NCM3, per the Capability Production Document requirements.												
Developed, integrated, and tested a persistent dynamic terrain capability in AVCATT which will improve the simulated representation of terrain in the virtual Aviation environment.												
FY 2015 Plans: Continues development and testing for new capabilities to enhance training when using the AVCATT and NCM3 in combined mode, including improved communications, hoist operations, slingload operations, and visual system realism improvements.												
Continues the integration and test phase for a persistent dynamic terrain capability in AVCATT which will improve the simulated representation of terrain in the virtual Aviation environment.												

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army								Date: February 2015			
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604780A / <i>Combined Arms Tactical Trainer (CATT) Core</i>				Project (Number/Name) 585 / <i>Aviation Combined Arms Tactical Trainer</i>			
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2014	FY 2015	FY 2016	
<p>Continues the development, integration, and testing of new capabilities to enhance training when using the AVCATT and NCM3 in a combined mode.</p> <p>Conducts training effectiveness analysis of the AVCATT system in meeting Army Aviation collective training requirements.</p> <p>Designs, develops, and tests new and improved architecture supporting virtual machines in support of reduction in future AVCATT operation and sustainment costs.</p> <p>Designs, develops, and tests new interfaces and protocols for a Voice Communication System Upgrade to remain synchronized with improvements to tactical radios for the AVCATT RWA platforms.</p> <p>FY 2016 Plans: Will complete development and testing for new interfaces and protocols for a Voice Communication System Upgrade to remain synchronized with improvements to tactical radios for the AVCATT RWA platforms.</p>											
Accomplishments/Planned Programs Subtotals								3.699	11.665	1.216	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• Other Procurement, Army: OPA3, <i>Appropriation NA0173 Aviation Combined Arms Tactical Trainer</i>	34.913	10.040	30.068	-	30.068	28.360	27.861	28.379	29.203	Continuing	Continuing
• Operations and Maintenance, Army: OMA, <i>Appropriation 121018000 Aviation Combined Arms Tactical Trainer</i>	-	0.150	0.100	-	0.100	0.050	-	-	-	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
: All AVCATT/NCM3 development will utilize small business competitively awarded contract vehicles, Small Business Innovative Research (SBIR) contract vehicles, or agreements with the Army Research Laboratory for University support of research and development.											

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604780A / Combined Arms Tactical Trainer (CATT) Core	Project (Number/Name) 585 / Aviation Combined Arms Tactical Trainer
E. Performance Metrics N/A		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604780A / Combined Arms Tactical Trainer (CATT) Core						Project (Number/Name) 585 / Aviation Combined Arms Tactical Trainer			
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
AVCATT Program Management Support	Various	PEO STRI : Orlando, FL	0.000	0.577		0.789		-		-		-	-	1.366	-
Subtotal			0.000	0.577		0.789		-		-		-	-	1.366	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
AVCATT Manned Unmanned Teaming (MUM-T)	C/CPFF	Applied Visual Technologies : Orlando, FL	1.880	-		-		-		-		-	-	1.880	-
AVCATT Visual Display Research	C/CPFF	Batelle Memorial Institute : Columbus, OH	0.318	-		-		-		-		-	-	0.318	-
AVCATT Dynamic Terrain	SS/CPFF	Dignitas Technologies, LLC : Orlando, FL	0.000	0.100	Sep 2014	0.250	Jun 2015	-		-		-	-	0.350	-
AVCATT NCM3 Development	C/CPFF	CymStar : Broken Arrow, Oklahoma	0.000	2.301	Aug 2014	1.200	Mar 2015	-		-		-	-	3.501	-
AVCATT/NCM3 Gunnery KPP	C/CPFF	Applied Visual Technologies : Orlando, FL	0.000	0.721	Apr 2014	3.228	Mar 2015	-		-		-	-	3.949	-
AVCATT Training Effectiveness Analysis	SS/CPFF	University of Central Florida : Orlando	0.000	-		1.182	Mar 2015	-		-		-	-	1.182	-
AVCATT Virtualization	C/CPFF	Applied Visual Technologies : Orlando, FL	0.000	-		2.249	May 2015	-		-		-	-	2.249	-
AVCATT Voice Communication Upgrade	C/CPFF	Applied Visual Technologies : Orlando, FL	0.000	-		2.767	May 2015	1.216	Jan 2016	-		1.216	-	3.983	-
Subtotal			2.198	3.122		10.876		1.216		-		1.216	-	17.412	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army											Date: February 2015				
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604780A / Combined Arms Tactical Trainer (CATT) Core					Project (Number/Name) 585 / Aviation Combined Arms Tactical Trainer					
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			2.198	3.699		11.665		1.216		-		1.216	-	18.778	-

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015												
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604780A / Combined Arms Tactical Trainer (CATT) Core								Project (Number/Name) 585 / Aviation Combined Arms Tactical Trainer										
Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
AVCATT Manned Unmanned Teaming (MUM-T)																												
AVCATT Visual Display Research																												
AVCATT Dynamic Terrain																												
Non-Rated Crew Member Manned Module (NCM3) Development																												
AVCATT/NCM3 Gunnery KPP																												
AVCATT Training Efeciveness Analysis																												
AVCATT Virtualization																												
AVCATT Voice Communication Upgrade																												
AVCATT/NCM3 EMD																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604780A / <i>Combined Arms Tactical Trainer (CATT) Core</i>	Project (Number/Name) 585 / <i>Aviation Combined Arms Tactical Trainer</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
AVCATT Manned Unmanned Teaming (MUM-T)	4	2013	2	2015
AVCATT Visual Display Research	1	2014	4	2015
AVCATT Dynamic Terrain	4	2014	4	2016
Non-Rated Crew Member Manned Module (NCM3) Development	4	2014	4	2016
AVCATT/NCM3 Gunnery KPP	1	2015	4	2016
AVCATT Training Effectiveness Analysis	2	2015	2	2016
AVCATT Virtualization	3	2015	4	2016
AVCATT Voice Communication Upgrade	3	2015	2	2017
AVCATT/NCM3 EMD	2	2017	4	2021