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Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Army										Date: May 2017		
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 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	-	20.808	15.068	18.566	-	18.566	19.601	20.415	17.361	10.962	Continuing	Continuing
571: Close Cbt Tact Trainer	-	0.725	0.998	0.937	-	0.937	0.845	0.836	0.536	0.000	Continuing	Continuing
577: Gaming Technology In Support Of Army Training	-	2.880	1.979	0.536	-	0.536	0.545	1.002	1.228	0.618	Continuing	Continuing
582: Synthetic Envir Core	-	16.035	9.322	11.513	-	11.513	10.077	10.179	10.221	10.344	Continuing	Continuing
585: Aviation Combined Arms Tactical Trainer	-	1.168	2.769	5.580	-	5.580	8.134	8.398	5.376	0.000	Continuing	Continuing
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. The CATT program portfolio directly supports the Army's Training Strategy and progressive training model by providing realistic training events and comprehensive After Action Reviews (AAR). 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 AAR for CATT expansions, Pre-Planned Product Improvements (P3I) and system enhancements. The Reconfigurable Vehicle Simulator (RVS) supports 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.												
FY 2018 core funding of \$.937 million for CCTT enables gaming technology and visualization for maneuver training, and the P3I for the CCTT in order to reduce life cycle costs.												

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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 2018 base funding of \$0.536 million will continue program management activities in conducting market research for future Engineering and Manufacturing Development (EMD) phase of GFT flagship replacement.						
FY 2018 base funding of \$11.513 million will continue the efforts of providing development of the capability to produce common terrain databases to maintain concurrency with supported training systems. FY 2018 funds will continue modifying the Terrain Development process for constructive terrain databases, and continue to enhance OneSAF in the SE Core Architecture. Base funding also provides continuous development of new OneSAF capabilities for virtual simulations and enables interoperability with the Live, Virtual, Constructive Integrated Training Environment (LVC ITE); this is a cost avoidance for individual virtual simulators in that they 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 2018 base funding of \$5.580 million for AVCATT will design and develop software to inter-operate with other training devices and simulators in a Common Operating Environment (COE). This is required to enable training with the Universal Mission Simulator, CCTT, Games For Training, and LVC-IA. Additionally, the base funding will be used to design and develop the replacement of the Image Generator system as part of hardware modernization.						
B. Program Change Summary (\$ in Millions)		FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Previous President's Budget		21.622	15.068	18.053	-	18.053
Current President's Budget		20.808	15.068	18.566	-	18.566
Total Adjustments		-0.814	0.000	0.513	-	0.513
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-			
• Congressional Rescissions		-	-			
• Congressional Adds		-	-			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-	-			
• SBIR/STTR Transfer		-0.814	-			
• Adjustments to Budget Years		0.000	0.000	0.513	-	0.513

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Army										Date: May 2017		
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 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
571: Close Cbt Tact Trainer	-	0.725	0.998	0.937	-	0.937	0.845	0.836	0.536	0.000	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 comprised of the CCTT and the Reconfigurable Vehicle Tactical Trainer (RVTT). CCTT is comprised of full fidelity, manned simulators for the M1 Abrams main battle tank, M2 Bradley Fighting Vehicles (BFV) variants, and Cavalry Fighting Vehicles (CFV). RVTT is a CCTT Reconfigurable Vehicle Simulator (RVS) comprised of full fidelity, manned simulators for the High Mobility Multipurpose Wheeled Vehicle (HMMWV) and Heavy Expanded Mobility Tactical Truck (HEMTT).												
FY 2018 core funding of \$.937 million for CCTT enables: the continued development and integration of gaming technology, development of visualization technology, support of maneuver training, and the P3I to reduce life cycle costs.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2016	FY 2017	FY 2018	
Title: Government Program Management for the Close Combat Tactical Trainer (CCTT) program.									0.125	0.163	0.166	
Description: Government Program Management for the CCTT program.												
FY 2016 Accomplishments: Supported government program management, engineering, technical, contracting support, and continues operational evaluation support.												
FY 2017 Plans: Will support government program management, engineering, technical, contracting support, and will continue operational evaluation support.												
FY 2018 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, and Interoperability between CCTT.									0.600	0.835	0.771	
Description: Continue EMD phase contract activities for CCTT.												
FY 2016 Accomplishments:												

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Army								Date: May 2017			
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 2016	FY 2017	FY 2018	
<p>Enabled the integration of gaming technology into CCTT in support of maneuver training for Armor Brigade Combat Teams.</p> <p>FY 2017 Plans: Will enable the continued development and integration of gaming technology; and development of virtualization technology into CCTT in support of maneuver training for Armor Brigade Combat Teams.</p> <p>FY 2018 Plans: Will enable the continued development and integration of gaming technology; and development of virtualization technology into CCTT in support of maneuver training for Armor Brigade Combat Teams.</p>											
Accomplishments/Planned Programs Subtotals								0.725	0.998	0.937	
C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u> <u>Base</u>	<u>FY 2018</u> <u>OCO</u>	<u>FY 2018</u> <u>Total</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPA3, Appropriation NA0170: OPA3, Appropriation NA0170	45.210	59.771	45.718	-	45.718	47.135	51.430	39.503	1.274	Continuing	Continuing
• OMA, Appropriation 121018000: OMA, Appropriation 121018000	2.687	2.960	3.235	-	3.235	3.648	3.893	3.973	6.164	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											
All CCTT development will utilize small business competitively awarded contract vehicles or agreements with the Army Research Laboratory (ARL) and other Army programs for support of research and development.											
E. Performance Metrics											
N/A											

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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) 577 / Gaming Technology In Support Of Army Training			
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
577: Gaming Technology In Support Of Army Training	-	2.880	1.979	0.536	-	0.536	0.545	1.002	1.228	0.618	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
The Games for Training (GFT) Program prepares Soldiers and leaders for combined arms maneuver operations for Force 2025 and beyond in support of the Joint Force and allies with tailorable and scalable training and mission rehearsal capabilities. 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, groundair coordination, Unmanned Aerial Vehicle (UAV) integration, and other small unit and individual training and mission rehearsal requirements. 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 Company and below formations to operate in today's dynamic combat environment. GFT trains higher multi-echelon units and staffs without troops to meet Combatant Commanders' requirements.												
FY 2018 base funding of \$0.536 million will continue program management activities in conducting market research for future Engineering and Manufacturing Development (EMD) phase of GFT flagship replacement. The decision to pursue GFT Increment II capability was deferred.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2016	FY 2017	FY 2018	
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 2016 Accomplishments: Funding provided modifications to the GFT system to ensure compliance with the LVC in support of Force 2025 and beyond. It also integrated new commercial and Government technology products into the current Gaming System. FY 2017 Plans: Funding will provide concurrency modifications to the GFT system to ensure integration compliance with Live, Virtual and Constructive simulations and Mission Command Systems in support of Force 2025 and beyond training. Funding will allow for Engineering and Manufacturing Development of the GFT system into Common Operating Environment (COE) for Data Cloud and Hand Held environments. Funding also provides market research for the GFT flagship replacement.									2.660	1.692	-	
Title: Government Program Management for the GFT program. Description: Government Program Management for the GFT program.									0.220	0.287	0.536	

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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 2016	FY 2017	FY 2018	
<i>FY 2016 Accomplishments:</i> Government program management, engineering, technical, contract and test activities provided integration of software, fielding, and web hosted support to U.S. Army Soldier tactical training.											
<i>FY 2017 Plans:</i> Government program management, engineering, technical, contract and test activities will provide integration of software, fielding, and web hosted support to U.S. Army Soldier tactical training.											
<i>FY 2018 Plans:</i> Government program management, engineering, technical, contract and test activities to support market research for future commercial and Government gaming solutions.											
Accomplishments/Planned Programs Subtotals								2.880	1.979	0.536	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	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
• OPA 3: <i>OPA 3, Appropriation NA0176 Gaming Technology in Support of Army Training</i>	9.793	11.543	5.406	-	5.406	3.454	10.483	5.395	4.179	Continuing	Continuing
• OMA: <i>OMA, Appropriation 121018000, TCAT</i>	-	0.250	0.241	-	0.241	0.240	0.238	0.237	0.250	Continuing	Continuing
Remarks											
OPA funding provides concurrency of the Virtual Battlespace 3 (VBS3) Flagship software license that provides the Army enterprise use rights. Additionally, funding provides for the procurement of new gaming hardware suites and gaming system refresh. The GFT program will also provide other commercial and Government off-the-shelf game software applications used to train Active, Reserve, and Army National Guard soldiers in a PC based, shared environment. OMA funding provides and supports Games for Training hardware and software Information Assurance (IA) and Risk Management Framework (RMF) requirements.											
D. Acquisition Strategy											
The acquisition strategy is to annually procure an Army-wide software license for a commercial or Government game based training system, Virtual Battlespace 3 (VBS3) and associated Games for Training system hardware that consists of a common desktop or laptop computer, headset, and peripherals. In support of concurrency initiatives to the COTS solution, the GFT program conducts development and integration activities for new models and visual concurrency into the VBS3 flagship software baseline.											

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<p>The government awarded a single award, multiple year Firm Fixed Price contract with a single base year awarded in FY13 and option years exercised in FY14, FY15, and FY16. FY17 will be the final option year and will result in an Army wide perpetual license that will be used until procurement of the flagship replacement.</p> <p>Efforts for flagship replacement gaming capability are currently being initiated for an FY19 start.</p> <p><u>E. Performance Metrics</u> N/A</p>		

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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			
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
582: Synthetic Envir Core	-	16.035	9.322	11.513	-	11.513	10.077	10.179	10.221	10.344	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 Force 2025 and beyond. 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 generation; 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 generate 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>FY17 base funding request decreased significantly from the PB16 submission due to a de-scoping of program requirements.</p>												
<p>FY 2018 base funding of \$11.513 million will continue the development of the terrain generation capability for common terrain databases to maintain concurrency with supported training systems. FY 2018 funds will continue developing the terrain generation tools and process for constructive terrain databases, and continue to enhance OneSAF in the SE Core Architecture. Base funding also provides continuous development of new OneSAF capabilities for virtual simulations and enables interoperability with the Live, Virtual, Constructive Integrated Training Environment (LVC ITE); this is a cost avoidance for individual virtual simulators in that they 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. Base funding will also begin development of new tools and processes needed to support the Dense Urban Terrain environment requirement.</p>												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2016	FY 2017	FY 2018	
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Synthetic Environment Core (SE Core) program.									14.250	7.730	9.841	
Description: Continue EMD phase contract activities for the SE Core program.												

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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>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2016	FY 2017
<p><i>FY 2016 Accomplishments:</i> Increment 2 provided expansion of the terrain generation capability to meet the demand for synthetic terrain for training including constructive simulation and gaming. Efforts to improve interoperability across simulators and simulations continued to include transportation networks.</p> <p><i>FY 2017 Plans:</i> Continues to satisfy requirements in preparation to complete Increment 2. Efforts will automate the terrain generation capability to meet the demand for synthetic terrain for constructive and gaming training. Will also increase interoperability across simulators and simulations by improving subterranean capabilities and transportation networks.</p> <p><i>FY 2018 Plans:</i> Satisfy requirements necessary to initiate Increment 3. Efforts will continue to automate the terrain generation capability to meet the demand for synthetic terrain for constructive and gaming training. Will also continue to increase interoperability across simulators and simulations by improving subterranean capabilities and building interiors. Will begin development of new tools and processes needed to support the Dense Urban Terrain environment requirement.</p>			
<p><i>Title:</i> Government Program Management for the Synthetic Environment Core (SE Core) program.</p> <p><i>Description:</i> Government Program Management for the SE Core program.</p> <p><i>FY 2016 Accomplishments:</i> Provided 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. Additionally, started acquisition management for the solicitation and evaluation for a new SE Core contract award.</p> <p><i>FY 2017 Plans:</i> 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.</p> <p><i>FY 2018 Plans:</i> 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 under the newly awarded contract.</p>		1.785	1.592
Accomplishments/Planned Programs Subtotals		16.035	11.513

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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			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	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
• OMA, Appropriation, 121018000: OMA, Appropriation 121018000, TBWG	21.436	16.878	16.432	-	16.432	15.609	16.165	16.947	18.570	Continuing	Continuing
Remarks											
OMA funds are used to generate and maintain the synthetic terrain, models, and virtual OneSAF for the Army’s Integrated Training Environment (ITE) concept.											
D. Acquisition Strategy											
The SE Core program is post Milestone B and will remain in the Engineering and Manufacturing Development phase for the remainder of its lifecycle. SE Core is a "software only" program that continuously develops terrain, virtual models and other software products for integration into existing training systems. It does not field products to the end user, therefore the program will not require a Milestone C decision or go into the Production phase. The SE Core program is developing the software tools and processes to develop the Army's common virtual environment to link simulation devices (to include: CCTT, AVCATT, GFT, LVC-IA, HITS, JLCCTC, FIRESIM, OneSAF) into an interoperable environment and maintaining the synthetic terrain, models, and virtual OneSAF for the Army's Integrated Training Environment (ITE) concept.											
The government awarded Increment 2 as a single award, cost plus fixed fee (CPFF), indefinite delivery indefinite quantity (IDIQ) contract 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, the third option in December 2014 and the fourth option in December 2015. The government will award a final delivery order in December 2016 that extends the period of performance of the Increment 2 contract into December 2017.											
In keeping with the original SE Core acquisition strategy of continuous development, the government intends to award the Increment 3 contract as a single award, CPFF, IDIQ contract in FY18. The contract will have a one year base and four one-year options with a target end date of 2022 to accommodate the extension of the program lifecycle by two years in order to support the Army's Integrated Training Environment.											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Army												Date: May 2017			
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 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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	-		-		-		-		-	0.000	3.622	3.622
Government Program Management Support	Various	PEO STRI : Orlando, FL	22.018	1.785	Oct 2015	1.592	Nov 2016	1.672	Oct 2017	-		1.672	Continuing	Continuing	Continuing
Subtotal			25.640	1.785		1.592		1.672		-		1.672	-	-	-
Product Development (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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	-		-		-		-		-	0.000	6.946	6.946
Technology Development -Architecture and Integration	C/CPFF	SAIC : Orlando, FL	50.785	-		-		-		-		-	0.000	50.785	50.785
Technology Development -Database Virtual Environment Development	C/CPFF	CAE, USA : Orlando, FL	56.179	-		-		-		-		-	0.000	56.179	56.179
Technology Development- Common Virtual Environment & Management	C/CPFF	Leidos : Orlando, FL	55.025	14.250	Dec 2015	7.730	Dec 2016	-		-		-	0.000	77.005	0.000
Technology Development- Common Virtual Environment & Management INC III	C/TBD	ACC-Orlando : Orlando, FL	0.000	-		-		9.841	Nov 2017	-		9.841	0.000	9.841	0.000
Subtotal			168.935	14.250		7.730		9.841		-		9.841	0.000	200.756	113.910

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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 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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	0.125	0.125
Subtotal			0.125	-		-		-		-		-	0.000	0.125	0.125

Remarks Not Applicable															
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			Prior Years	FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			194.700	16.035		9.322		11.513		-		11.513	-	-	-

Remarks															
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PE 0604780A: *Combined Arms Tactical Trainer (CATT) Co...*
Army

R-1 Line #102

Project (Number/Name)	Start Date	End Date	Status	Manager	Budget (USD)	Actual Cost (USD)	Progress (%)	Risk Level	Notes
101/Alpha	2023-01-15	2023-03-31	Completed	J. Doe	150,000	148,500	100	Low	Exceeded budget by 1.5%
102/Beta	2023-02-01	2023-05-15	In Progress	A. Smith	220,000	180,000	82	Medium	Minor delays in procurement
103/Gamma	2023-03-10	2023-06-30	On Hold	M. Chen	90,000	0	0	High	Waiting for client approval
104/Delta	2023-04-01	2023-07-31	Planned	S. Kim	180,000	0	0	Medium	Initial planning phase
105/Epsilon	2023-05-01	2023-08-31	Not Started	L. Garcia	110,000	0	0	Low	Resource allocation pending

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

PE 0604780A: *Combined Arms Tactical Trainer (CATT) Co...*
Army

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Exhibit R-4A, RDT&E Schedule Details: FY 2018 Army			Date: May 2017
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 (Development and Integration)	4	2013	1	2018
Increment 3 (Development and Integration)	1	2018	1	2023

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Army										Date: May 2017		
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 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
585: Aviation Combined Arms Tactical Trainer	-	1.168	2.769	5.580	-	5.580	8.134	8.398	5.376	0.000	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, OH-58, and UH-72 aircrews within the Live, Virtual and Constructive (LVC) 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, CH-47, and UH-72 cockpit configurations to support a unit's specific Mission Training Requirements.												
FY2018 base funding for AVCATT will design and develop software to inter-operate with other training devices and simulators in a Common Operating Environment (COE). This is required to enable training with the Universal Mission Simulator, CCTT, Games For Training, and LVC-IA. Additionally, the base funding will be used to design and develop the replacement of the Image Generator system as part of hardware modernization.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2016	FY 2017	FY 2018	
Title: Government Program Management for the Aviation Combined Arms Tactical Trainer (AVCATT) program.									1.168	0.185	0.104	
Description: Government Program Management for the AVCATT program.												
FY 2016 Accomplishments: Supported government program management, engineering, technical, contracting support, and continues operational evaluation support.												
FY 2017 Plans: Will support government program management, engineering, technical, contracting support, and continues operational evaluation support.												
FY 2018 Plans: Will support government program management, engineering, technical, contracting support, and continues operational evaluation support.												
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Aviation Combined Arms Tactical Trainer (AVCATT) program.									-	2.584	5.476	

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Army								Date: May 2017			
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 2016	FY 2017	FY 2018	
Description: Continue EMD phase contract activities for the AVCATT program. FY 2017 Plans: Will complete the design, development, and testing for the first article test for a virtualized AVCATT manned module architecture in order to reduce the current computer hardware footprint in preparation for FY18 planned hardware modernization. FY 2018 Plans: Will complete development and testing for new interfaces and protocols for the system to inter-operate with other training devices and simulators in a Common Operating Environment (COE). Will begin design and development of upgraded image generators in preparation for FY20 planned hardware modernization.											
Accomplishments/Planned Programs Subtotals								1.168	2.769	5.580	
C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u> <u>Base</u>	<u>FY 2018</u> <u>OCO</u>	<u>FY 2018</u> <u>Total</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• Other Procurement, Army: OPA3, Appropriation NA0173 Aviation Combined Arms Tactical Trainer	30.068	40.000	30.568	-	30.568	25.281	31.062	32.430	42.191	Continuing	Continuing
• Operations and Maintenance, Army: OMA, Appropriation 121018000 Aviation Combined Arms Tactical Trainer	0.100	-	-	-	-	-	-	-	-	0	0.100
Remarks											
D. Acquisition Strategy											
<p>The government awarded a single award, cost plus fixed fee (CPFF), indefinite delivery indefinite quantity (IDIQ) contract to Applied Visual Technologies, a minority owned, small disadvantaged business, in December 2012. The period of performance of the base contract is through December 2017. Additional tasks are exercised through delivery orders which each have multiple options for development. The most recently awarded RDTE effort was on the fourth delivery order, awarded in September 2014, which included options for gunnery enhancements, integrated data modem development, training environment virtualization, aviation mission planning software development, maintenance tool kit development, manned unmanned teaming, and AH-64E concurrency development.</p> <p>The government awarded a single award, CPFF, IDIQ services contract to Cole Engineering Services, Inc, a small business, in September 2015. The period of performance of the base contract is through September 2020. The third task order, awarded in June 2016, included hardware modernization development and Windows 10 research and testing.</p>											

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
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
<p>AVCATT utilizes small business competitively awarded contract vehicles when able. Currently small businesses are conducting development for dynamic terrain enhancements, NCM3 development, and training effectiveness analysis.</p> <p>The AVCATT program is post Milestone C. Although the system is in the production phase, continuous research, development, testing, and engineering is required in order to maintain concurrency with the real world aircraft and systems that the AVCATT simulates in the virtual training environment. The AVCATT program has fielded the full base order of issue of 23 suites but continues to release incremental hardware and software upgrades at approximate semiannual intervals.</p> <p><u>E. Performance Metrics</u> N/A</p>		