

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2007

BUDGET ACTIVITY		PE NUMBER AND TITLE								
5 - System Development and Demonstration		0604715A - Non-System Training Devices - Eng Dev								
COST (In Thousands)	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	53859	124068	35992	17493	16307	19208	101837	65478	Continuing	Continuing
241 NSTD COMBINED ARMS	52011	122076	33462	15040	13803	16660	99248	62833	Continuing	Continuing
573 STRICOM/NAWCTSD SUPPORT	1383	1493	2034	1954	2004	2048	2089	2145	Continuing	Continuing
587 ARMY DEVELOP CTIA/TENA CAPABILITY	465	499	496	499	500	500	500	500	Continuing	Continuing

A. Mission Description and Budget Item Justification: Program Element funds development of Non-System Training Devices to support force-on-force training at the Combat Training Centers (CTC), general military training, and training on more than one item/system, as compared with system devices which are developed in support of a specific item/weapon system. Training devices and training simulations contribute to the modernization of the forces by enabling and strengthening combat effectiveness through realistic training solutions for the Warfighter. Training devices maximize the transfer of knowledge, skills, and experience from the training situation to a combat situation. Force-on-force training at the National Training Center (NTC), Ft. Irwin, CA; Joint Readiness Training Center (JRTC), Ft. Polk, LA, and Joint Multinational Readiness Center (JMRC), formerly the Combat Maneuver Training Center (CMTC), Hohenfels, Germany; and battle staff training in Battle Command Training Program (BCTP) provide increased combat readiness through realistic collective training in low, mid, and high intensity scenarios. Project 241, Non-System Training Devices-Combined Arms, develops simulation training devices for Army-wide use, including the CTCs. Project 573 funds key organizational support to Army/DoD Transformation via innovative simulation and training device efforts. Program Executive Office (PEO) Simulation, Training and Instrumentation (STRI's) unique geographic colocation with other services facilitates joint training solutions in a common environment. FY08 funding supports a more active presence in this effort. Development update of Common Training Instrumentation Architecture (CTIA) services that are level 2 compliant with the DoD Test and Training Enabling Architecture (TENA).

In FY08/09, the Non-System Training Devices, 241 project line will develop prototype training devices to support Combined Arms (Infantry, Armor, Aviation, Air Defense, Artillery, Engineer, Chemical, and Support troops) training and multi-system training within the Army. There is an increased effort to replace the instrumentation system at the National Training Center (NTC), Ft. Irwin, CA and at the Joint Readiness Training Center (JRTC), Ft. Polk, LA with a system that meets the Army's existing and future, advanced collective training objectives. This is a complete modernization of these two systems, leveraging advanced technology using a modular concept. One Tactical Engagement Simulation System (OneTESS) development continues to provide realistic force-on-force training for weapon systems that are not direct fire and maximizes embedded training capability where possible. In FY08/09, PEO STRI/NAWCTSD SUPT, 573 project line will provide for minimum PEO STRI core operations supporting development of training devices and simulations by PEO STRI Project Managers (PM TRADE, PM ITTS, PM CATT, PM Future Force (S) and PM Constructive Simulation).

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2007

BUDGET ACTIVITY	PE NUMBER AND TITLE			
5 - System Development and Demonstration	0604715A - Non-System Training Devices - Eng Dev			
<u>B. Program Change Summary</u>	FY 2006	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2007)	60219	121553	72634	42144
Current BES/President's Budget (FY 2008/2009)	53859	124068	35992	17493
Total Adjustments	-6360	2515	-36642	-24651
Congressional Program Reductions		-474		
Congressional Rescissions				
Congressional Increases		3900		
Reprogrammings	-4805	-911		
SBIR/STTR Transfer	-1555			
Adjustments to Budget Years			-36642	-24651

FY 2008/2009: Funds realigned (FY08:\$35,642/FY09:\$23,651) to higher priority requirements.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2007

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604715A - Non-System Training Devices - Eng Dev							PROJECT 241		
COST (In Thousands)	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
241 NSTD COMBINED ARMS	52011	122076	33462	15040	13803	16660	99248	62833	Continuing	Continuing

A. Mission Description and Budget Item Justification: This project supports development of prototype training devices to support Combined Arms (Infantry, Armor, Aviation, Air Defense, Artillery, Engineer, Chemical, and Support troops) training and multi-system training within the Army, to include the Reserve Components.

Corps Battle Simulation (CBS) is the Army's current command and staff training simulation at the corps/division level. CBS is the cornerstone model of the Joint Training Transformation Initiative Plus(JTTI+) and the essential Brigade to Corps piece of the first three versions of the Joint Land Component Constructive Training Capability (JLCCTC). CBS supports the Joint Non-kinetic Effects Model (JNEM) which is the training tool that simulates asymmetric aspects of mission operations in WARFIGHTER exercises and Mission Rehearsal Exercises, and is a functional model in the JLCCTC. Tactical Simulation (TACSIM) is the Army's current primary tactical intelligence module for constructive simulation and the intelligence piece of the JLCCTC until the Warfighters' Simulation (WARSIM) Intelligence Module (WIM) replaces TACSIM. TACSIM also supports the JTTI+. The One Tactical Engagement Simulation System (One TESS) provides for an advanced, joint, collective, combined arms, live force on force training system using tactical weapon systems supported by a family of Training Aids, Devices, Simulations and Simulators (TADSS) that support up to brigade-level exercises, including all Battlefield Operating Systems, at Homestation, Maneuver Combat Training Centers (MCTC), and deployed sites. The Combat Training Center Objective Instrumentation System (CTC OIS), comprised of the prior National Training Center (NTC) and Joint Readiness Training Center (JRTC) OIS programs, provides a completely digital based system, and also provides the observer/controller, Training Analyst and Feedback analyst the ability to monitor unit approach, engagement, and departure maneuver activities and identify and isolate pertinent voice, data and video segments in a near real time manner for objective After Action Review (AAR) feedback to the unit based on approved Tactics, Techniques and Procedures (TTP) and Mission Training Plan (MTPs) for a Brigade-level training event. The NTC Military Operations in Urban Terrain (NTC MOUT) Instrumentation program provides Urban Operation sites the necessary instrumentation to support training data collection, data analysis and objective AAR feedback based on approved TTPs. The Common Training Instrumentation Architecture (CTIA) provides the common architecture framework for developing the Live Training Transformation (LT2) Product Line of live training systems supporting Army-wide Force-On-Force (FOF) and Force-On-Target (FOT) training requirements. CTIA is a spiral development, evolutionary acquisition program that continues to provide developmental support for the LT2 Product line in compliance with the DoD Test and Training Enabling Architecture (TENA). The Engagement Skills Trainer (EST) provides individual and crew weapon marksmanship at the squad level for collective training. Squad leaders are able to control and evaluate individual, team and squad performance. The Virtual Patient Simulators (VPS) are a component of the Medical Simulation Training Centers (MSTCs). These include the training devices such as bleed/breathe simulators, weighted mannequins, airway management mannequins, and IV arms. The MSTCs provide standardized Combat Medic Advanced Skills Training (CMAST) and Combat Lifesaver (CLS) training. The Homestation Instrumentation Training System (HITS) is a deployable Homestation Instrumentation Training System that will provide CTC-like instrumented capability to support platoon through battalion FOF training.

FY08/09 funds significant development efforts on Engagement Skills Trainer (EST), Virtual Patient Simulator (VPS), OneTESS, and further implementation of Live Training Transformation (LT2) through development of the Common Training Instrumentation Architecture (CTIA); enabling Joint training with the Joint Forces Command through modernization programs including the Objective Instrumentation Systems (OISs) for the Maneuver CTCs, Homestations, Integrated Military Operations in Urban Terrain (IMTS), and Digital Range Training System (DRTS). These systems provide integrated Live, Virtual, and Constructive training environments and tools in support of the Contemporary Operating Environment, funds Improvised Explosive Device Explosive Simulator (IEDES) to develop realistic detection and reaction training against IED threats through simulated, but realistic battlefield cues and effects. Additionally, in FY08 Homestation Instrumentation Training System (HITS) program will integrate and test LT2 products into

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2007

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604715A - Non-System Training Devices - Eng Dev	PROJECT 241
---	---	------------------------------

HITS design.

<u>Accomplishments/Planned Program:</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
FY08-FY09: Continues development, installation, integration and testing of CTC OIS Technology Capability Groupings (TCG) for support of Early Fielding at both the NTC and JRTC. The NTC MOUT will continue to design efforts and test in FY 07. Continue spiral development of CTIA to provide the common architecture capabilities that are essential for development and fielding of the CTC, IMTS, and DRTS training instrumentation programs.	32073	63167	7731	5325
FY06-FY07: Completes CBS enhancements and security accreditation, and provides support to JLCCTC functionality and integration.	5589	6781		
FY06-FY09: Continues development of One Tactical Engagement Simulation System (One TESS). Refine systems architecture, develop FCS/Joint, Live/Virtual and Constructive solutions and integrate operational testing that supports the training and testing communities into current combat systems under development.	11426	42691	23198	6357
FY06-FY07: Completes TACSIM limited enhancements to support JLCCTC and TACSIM security accreditation.	2166	2199		
FY06: Developed intra-Tactical Operations Center (TOC) ABCS Collection capability for the Digital AAR Tool (DAART) at the MCTC's.	757			
FY07: Jamming Effects Training Module (Congressional Add)		3872		
FY08-FY09: Improvised Explosive Device Explosive Simulator (IEDES) - Develops realistic detection and reaction training against IED threats through simulated, but realistic battlefield cues and effects.			319	217
FY09: Engagement Skills Trainer 2000(EST) Pre-Planned Product Improvements (P3I) for weapon enhancements including: the M145 machine gun optic, Call for and adjust indirect fires, Vehicle Ring and Pedestal mounts to include Leaders Hatch skate ring and family of AN/PAS-13 Thermal Weapons Sights.				1795
FY08-FY09: The Virtual Patient Simulator (VPS) will expand to include a simulation control center, to operate multiple, networked simulators; student performance tracking; additional scenario development; and integration into other virtual training devices, for combined/collective training.			480	480
FY08-FY09: The Homestation Instrumentation Training System (HITS) program will integrate and test LT2 products into HITS design.			1734	866
FY07: SBIR/STTR Reduction		3366		
Total	52011	122076	33462	15040

<u>B. Other Program Funding Summary</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>To Compl</u>	<u>Total Cost</u>
OPA3, Appropriation NA0100 Training Devices, Non-System	221118	319475	201843	238232	192802	190921	203423	211347	Continuing	Continuing
OPA3, Appropriation MA6601 CTC Support	56044	45882	16337	16621	15169	4027	32761	92128	Continuing	Continuing

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2007

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604715A - Non-System Training Devices - Eng Dev

PROJECT

241

Comment:

C. Acquisition Strategy Competitive development efforts based on performance specifications.

ARMY RDT&E COST ANALYSIS (R3)

February 2007

BUDGET ACTIVITY			PE NUMBER AND TITLE									PROJECT		
5 - System Development and Demonstration			0604715A - Non-System Training Devices - Eng Dev									241		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
CBS Development	C/FFP	JPL, Cal Tech, Pasadena, CA	43514	4545	1-3Q	5946	1-3Q						54005	54005
TACSIM Enhancement Development	C/CPFF	Northrop Grumman, Orlando, FL	1033	1840	1-3Q	1199	1-3Q						4072	4072
CTC OIS: NTC	CPAF	Lockheed Martin Simulation Training and Support, Orlando, FL	70893	15204	1-2Q	25274	1-2Q						111371	111371
CTC OIS: JRTC	CPAF	Lockheed Martin Simulation Training and Support, Orlando, FL		5676	1-2Q	29766	1-2Q						35442	35442
NTC MOUT	TBS	TBS		2279	2Q	1506	2Q						3785	3785
CTIA	C/FFP	Lockheed Martin Inc., Orlando, FL	34913	6297	1-2Q	5315	1-2Q	6231	1-2Q	3825	1-2Q	Cont.	Cont.	Cont.
One TESS	Various	Multiple	21876	9322	1-2Q	41633	1-2Q	20732	1-2Q	4429	1-2Q	Cont.	Cont.	Cont.
LVCIA	various	various	3632										3632	2067
AWSS	FFP	MDS, Fullerton, CA	6632										6632	6700
CBS Security	C/FFP	TITAN, Leavenworth, KS	230	240	1-3Q	230	1-3Q						700	700
TACSIM DEVELOPMENT	various	multiple		85	1-4Q	242	1-3Q						327	327
MCTC DAART	C/FFP	TBD		757	1-2Q								757	795
IEDES	TBS	TBS						319	2Q	217	2Q	Cont.	Cont.	Cont.
Jamming Effects Training Module	TBS	TBS				3872	2Q						3872	3872
EST 2000 P3I Weapon Enhancements	C/FFP	Cubic Simulation Systems Division, Orlando, FL								1795	1Q	Cont.	Cont.	Cont.
Virtual Patient Simulator	C/FFP	Medical Education Technologies, Inc., Sarasota, FL						480	2Q	480	2Q	Cont.	Cont.	Cont.
HITS	TBS	TBS						1434	2-3Q				1434	1434

ARMY RDT&E COST ANALYSIS (R3)

February 2007

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604715A - Non-System Training Devices - Eng Dev	PROJECT 241
--	--	-----------------------

Subtotal:	182723	46245		114983		29196		10746		Cont.	Cont.	Cont.
-----------	--------	-------	--	--------	--	-------	--	-------	--	-------	-------	-------

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
CBS Engineering & Technical Support	Multiple	Multiple	1120	111	1-4Q	152	1-4Q						1383	1383
TACSIM Engineering, Technical and Administrative Support	Multiple	Multiple	169				1-4Q						169	169
CTC OIS: NTC	Various	Multiple	11345	700	1-4Q	1053	1-4Q						13098	13098
CTC OIS: JRTC	Various	Multiple		317	1-4Q	381	1-4Q						698	698
NTC MOUT	Various	Multiple		100	1-4Q	224	1-4Q						324	324
CTIA	Various	Various	6175	1500	1-4Q	1500	1-4Q	1500	1-4Q	1500	1-4Q	Cont.	Cont.	Cont.
OneTESS	Multiple	Various	3543	355	1-4Q	674	1-4Q	675	1-4Q	96	1-4Q	Cont.	Cont.	Cont.
HITS	TBS	TBS						300	1-4Q	100	1-4Q	Cont.	Cont.	Cont.
Subtotal:			22352	3083		3984		2475		1696		Cont.	Cont.	Cont.

III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
CBS Test Support	Various	Multiple	139	93	1-4Q		1-4Q						232	232
TACSIM Accreditation Testing	Various	Multiple	81	32	1-4Q	57	1-4Q						170	170
OneTESS Development and Test	MIPR	Multiple	800	761	1Q	485	1-4Q	488	1-4Q	490	1-4Q	Cont.	Cont.	Cont.
HITS	TBS	TBS								766	1-2Q	Cont.	Cont.	Cont.
Subtotal:			1020	886		542		488		1256		Cont.	Cont.	Cont.

ARMY RDT&E COST ANALYSIS (R3)

February 2007

BUDGET ACTIVITY 5 - System Development and Demonstration			PE NUMBER AND TITLE 0604715A - Non-System Training Devices - Eng Dev									PROJECT 241		
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
CBS Program Management	Various	PEO STRI, Orlando, FL 32826	1723	600	1-4Q	651	1-4Q						2974	2974
TACSIM Program Management	Various	Multiple	159	209	1-4Q	766	1-4Q						1134	1134
OneTESS Program Management	Various	PEO STRI, Orlando, FL 32826	2019	988	1-4Q	1150	1-4Q	1303	1-4Q	1342	1-4Q	Cont.	Cont.	Cont.
Subtotal:			3901	1797		2567		1303		1342		Cont.	Cont.	Cont.
Project Total Cost:			209996	52011		122076		33462		15040		Cont.	Cont.	Cont.

Schedule Profile (R4 Exhibit)

February 2007

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604715A - Non-System Training Devices - Eng Dev

PROJECT
241

Event Name	FY 06				FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13							
	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	1	2	3	4				
(1) OneTESS MS C													▲ 1																							
(2) OneTESS IOC																					▲ 2															
(3) CTC OIS: NTC INCREMENT I																	▲ 3																			
CBS/TACSIM Annual Version Releases for JLCCTC																																				
(4) CTC OIS: JRTC INCREMENT I																					▲ 4															
(5) EST 2000 P3I Weapon Enhancements																	▲ 5																			

Schedule Detail (R4a Exhibit)

February 2007

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604715A - Non-System Training Devices - Eng Dev

PROJECT
241

<u>Schedule Detail</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>
OneTESS MS C				3Q				
OneTESS IOC					3Q			
CTC OIS: NTC INCREMENT I			4Q					
CBS/TACSIM Annual Version Releases for JLCCTC	1Q - 4Q	1Q - 4Q						
CTC OIS: JRTC INCREMENT I				1Q				
EST 2000 P3I Weapon Enhancements				1Q - 4Q	1Q			
CBS/TACSIM Annual Version Releases for JLCCTC	1Q - 3Q							
TACSIM Enhancement Development Contract Award	1Q - 4Q							

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2007

BUDGET ACTIVITY 5 - System Development and Demonstration			PE NUMBER AND TITLE 0604715A - Non-System Training Devices - Eng Dev						PROJECT 573	
COST (In Thousands)	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
573 STRICOM/NAWCTSD SUPPORT	1383	1493	2034	1954	2004	2048	2089	2145	Continuing	Continuing

A. Mission Description and Budget Item Justification: In support of Non-System Training Devices (NSTD), this project funds the US Army Program Executive Officer Simulation, Training and Instrumentation (PEO STRI) core operations supporting development of training devices and simulations by PEO STRI project managers (PM TRADE, PM ITTS, PM CATT, PM Constructive Simulation and PM (Future Force) Simulation. FY08/09 project funds labor in support of PEO operations.

Accomplishments/Planned Program:	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
FY06-FY09: Continues to support PEO STRI labor for project managers in PM TRADE, PM ITTS, PM CATT, PM Constructive Simulation and PM (Future Force)Simulation.	1383	1493	1653	1563
FY06 Public Law mandated the Army track FCS related work for accountability purposes. This funding represents salary dollars for three Department of the Army Civilians for the research and development of simulation systems to support the Army Future Combat System			381	391
Total	1383	1493	2034	1954

B. Other Program Funding Summary Not applicable for this item.

C. Acquisition Strategy Not Applicable.