

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

**February 2008**

BUDGET ACTIVITY		PE NUMBER AND TITLE							
<b>5 - System Development and Demonstration</b>		<b>0604715A - Non-System Training Devices - Eng Dev</b>							
COST (In Thousands)	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	122258	35731	35424	16240	19121	18761	16427	Continuing	Continuing
241 NSTD COMBINED ARMS	120266	33218	32973	13735	16572	16168	13778	Continuing	Continuing
573 STRICOM/NAWCTSD SUPPORT	1504	2020	1955	2009	2053	2096	2152	Continuing	Continuing
587 ARMY DEVELOP CTIA/TENA CAPABILITY	488	493	496	496	496	497	497	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.

In FY09, 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 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 (One TESS) 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 FY09, 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).

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**5 - System Development and Demonstration**

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

<u><b>B. Program Change Summary</b></u>	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2008/2009)	124068	35992	17493
Current BES/President's Budget (FY 2009)	122258	35731	35424
Total Adjustments	-1810	-261	17931
Congressional Program Reductions		-261	
Congressional Rescissions			
Congressional Increases			
Reprogrammings	1571		
SBIR/STTR Transfer	-3381		
Adjustments to Budget Years			17931

**Change Summary Explanation:**

FY 2009: \$17.931 million was realigned from OPA to RDTE for the OneTESS program. The OneTESS program is now a designated program on the Secretary of Defense Test & Evaluation Oversight List. DOT&E recommended a Limited User Test (LUT) prior to Milestone C, which pushes Milestone C to 4th Quarter FY09. LUT is correctly funded with RDTE in FY09, and negates requirement for OPA in FY09.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

**February 2008**

<b>BUDGET ACTIVITY</b> <b>5 - System Development and Demonstration</b>		<b>PE NUMBER AND TITLE</b> <b>0604715A - Non-System Training Devices - Eng Dev</b>						<b>PROJECT</b> <b>241</b>	
COST (In Thousands)	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	120266	33218	32973	13735	16572	16168	13778	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.

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 MOU) 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 Medical Simulation Training Center (MSTC) System provides a standardized combat medicine training capability to multi-component Army Soldiers, while being capable of training Joint, Interdepartmental, and Coalition Partner organizations to better prepare personnel for medical interventions under combat conditions. Each MSTC System is made up of sub-systems, to include the Virtual Patient System (VPS). The VPS contains multiple training devices which are delivering increasing degrees of fidelity and trauma patient responses. The MSTC System combines bleed/breathe and weighted mannequins, airway management and intravenous task trainers, standardized programs of instruction, skilled instructors, adaptive scenarios, and tactical lane training into a cohesive training capability for combat medicine. 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.

FY09 funds significant development efforts on Enagement Skills Trailer (EST), Virtual Patient System (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 Effects Simulator (IEDES) to develop realistic detection and reaction training against IED threats through simulated, but realistic battlefield cues and effects. Additionally, Homestation Instrumentation Training System (HITS) program will integrate and test LT2 products into HITS design.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

**February 2008**

<b>BUDGET ACTIVITY</b> <b>5 - System Development and Demonstration</b>	<b>PE NUMBER AND TITLE</b> <b>0604715A - Non-System Training Devices - Eng Dev</b>			<b>PROJECT</b> <b>241</b>		
<b><u>Accomplishments/Planned Program:</u></b>				<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
FY07-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, HITS, and DRTS training instrumentation programs.				63645	7477	5825
FY07: Completed CBS enhancements and security accreditation, and provided support to JLCCTC functionality and integration.				6831		
FY07-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.				43014	22434	23790
FY07: Completed TACSIM limited enhancements to support JLCCTC and TACSIM security accreditation.				2216		
FY07: Jamming Effects Training Module (Congressional Add)				3900		
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.					308	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: Develop within the Virtual Patient System (VPS) an effective Tetherless Mannequin (TLM) training capability and a Medical Training Evaluation and Review (MeTER) System.					464	480
FY08-FY09: The Homestation Instrumentation Training System (HITS) program will integrate and test LT2 products into HITS design.					1676	866
FY08: Small Business Innovative Research/Small Business Technology Transfer Programs.					859	
FY07: Execute integration and interoperability initiatives across the entire Live, Virtual, Constructive portfolio.				660		
<b>Total</b>				<b>120266</b>	<b>33218</b>	<b>32973</b>

<b><u>B. Other Program Funding Summary</u></b>	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
OPA3, Appropriation NA0100 Training Devices, Non-System	340895	335957	218614	191173	189427	201573	209438	Continuing	Continuing
OPA3, Appropriation MA6601 CTC Support	151078	21491	16508	15041	3995	5709	2109	Continuing	Continuing

Comment:

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

**ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)**

**February 2008**

BUDGET ACTIVITY

**5 - System Development and Demonstration**

PE NUMBER AND TITLE

**0604715A - Non-System Training Devices - Eng Dev**

PROJECT

**241**

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# ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY <b>5 - System Development and Demonstration</b>			PE NUMBER AND TITLE <b>0604715A - Non-System Training Devices - Eng Dev</b>							PROJECT <b>241</b>		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	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
CTC OIS: NTC	CPAF	Lockheed Martin Simulation Training and Support, Orlando, FL	86097	25274	1-2Q						111371	111371
CTC OIS: JRTC	CPAF	Lockheed Martin Simulation Training and Support, Orlando, FL	5676	28572	1-2Q						34248	35442
NTC MOUT	FFP	Unitech, Orlando, FL	2279	1470	3Q						3749	3785
CTIA	C/FFP	Lockheed Martin Inc., Orlando, FL	41210	5171	1-2Q	5977	1-2Q	4325	1-2Q	Cont.	Cont.	Cont.
One TESS	Various	Multiple	31198	40653	1-2Q	19945	1-2Q	21282	1-2Q	Cont.	Cont.	Cont.
IEDES	TBS	TBS				308	2Q	217	2Q	Cont.	Cont.	Cont.
Jamming Effects Training Module	FFP	Unitech, Orlando, FL		3900	1-4Q						3900	3872
EST 2000 P3I Weapon Enhancements	SS/FFP	Cubic Simulation Systems Division, Orlando, FL						1700	2Q	Cont.	Cont.	Cont.
Virtual Patient System	C/FFP	Medical Education Technologies, Inc., Sarasota, FL				464	2Q	480	2Q	Cont.	Cont.	Cont.
HITS	TBS	TBS				1376	2-3Q				1376	1434
CBS Development	C/FFP	JPL, Cal Tech, Pasadena, CA	48059	5788	1-3Q						53847	53511
TACSIM Enhancement Development	C/CPFF	Nothrop Grumman	2873	1708	1-3Q						4581	4713
CBS Security	C/FFP	TITAN, Leavenworth, KS	470	240	1-3Q						710	710
TACSIM Development	various	multiple	85	85	1-4Q						170	170
Live Virtual Constructive Development		TBD		660							660	
Subtotal:			217947	113521		28070		28004		Cont.	Cont.	Cont.

# ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY <b>5 - System Development and Demonstration</b>	PE NUMBER AND TITLE <b>0604715A - Non-System Training Devices - Eng Dev</b>	PROJECT <b>241</b>
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II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	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	1231	152	1-4Q						1383	1383
TACSIM Engineering, Technical and Administrative Support	Multiple	Multiple	169								169	169
CTC OIS: NTC	Various	Multiple	12045	1053	1-4Q						13098	13098
CTC OIS: JRTC	Various	Multiple	317	381	1-4Q						698	698
NTC MOUT	Various	Multiple	100	224	1-4Q						324	324
CTIA	Various	Various	7675	1500	1-4Q	1500	1-4Q	1500	1-4Q	Cont.	Cont.	Cont.
OneTESS	Multiple	Various	3898	692	1-4Q	682	1-4Q	667	1-4Q	Cont.	Cont.	Cont.
HITS	TBS	TBS				300	1-4Q	100	1-4Q	Cont.	Cont.	Cont.
Subtotal:			25435	4002		2482		2267		Cont.	Cont.	Cont.

III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	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	232		1-4Q						232	232
TACSIM Accreditation Testing	Various	Multiple	113	57	1-4Q						170	170
OneTESS Development and Test	MIPR	Multiple	1561	497	1-4Q	496	1-4Q	488	1-4Q	Cont.	Cont.	Cont.
HITS	TBS	TBS						766	1-2Q	Cont.	Cont.	Cont.
Subtotal:			1906	554		496		1254		Cont.	Cont.	Cont.

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	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
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# ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604715A - Non-System Training Devices - Eng Dev							241		
	Type				Date		Date		Date		Contract	
CBS Program Management	Various	PEO STRI, Orlando, FL 32826	2323	651	1-4Q					2974	2974	
TACSIM Program Management	Various	Multiple	368	366	1-4Q					734	1134	
OneTESS Program Management	Various	PEO STRI, Orlando, FL 32826	3007	1172	1-4Q	1311	1-4Q	1353	1-4Q	Cont.	Cont.	
EST 2000 Program Management	Various	PEO STRI, Orlando, FL 32826						95	1-4Q		95	
SBIR/STTR						859					859	
Subtotal:			5698	2189		2170		1448		Cont.	Cont.	
<b>Project Total Cost:</b>			<b>250986</b>	<b>120266</b>		<b>33218</b>		<b>32973</b>		<b>Cont.</b>	<b>Cont.</b>	

# Schedule Profile (R4 Exhibit)

February 2008

BUDGET ACTIVITY  
**5 - System Development and Demonstration**

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

PROJECT  
**241**

Event Name	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) OneTESS MS C												▲																
OneTESS Limited User Test											■																	
(2) CTC OIS: NTC INCREMENT I								▲																				
(3) CTC OIS: JRTC INCREMENT I											▲																	
CBS/TACSIM Annual Version Releases for JLCCTC	■	■	■	■																								
EST 2000 P3I Weapon Enhancements											■	■																
CTIA Version 1.6			▲																									
CTIA Version 2.0							▲																					
CTIA Version 2.1											▲																	
CTIA Version 2.2															▲													
HITS Development											■	■																

**Schedule Detail (R4a Exhibit)**

**February 2008**

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 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			4Q				
OneTESS Limited User Test			3Q				
CTC OIS: NTC INCREMENT I		4Q					
CTC OIS: JRTC INCREMENT I			1Q				
CBS/TACSIM Annual Version Releases for JLCCTC	1Q - 4Q						
EST 2000 P3I Weapon Enhancements			2Q - 4Q	1Q - 2Q			
CTIA Version 1.6	4Q						
CTIA Version 2.0		2Q					
CTIA Version 2.1			4Q				
CTIA Version 2.2				4Q			
HITS Development		2Q - 4Q	1Q - 4Q				

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<b>BUDGET ACTIVITY</b> <b>5 - System Development and Demonstration</b>		<b>PE NUMBER AND TITLE</b> <b>0604715A - Non-System Training Devices - Eng Dev</b>						<b>PROJECT</b> <b>573</b>	
COST (In Thousands)	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	1504	2020	1955	2009	2053	2096	2152	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. FY09 project funds labor in support of PEO operations.

<b><u>Accomplishments/Planned Program:</u></b>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
FY07-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).	1504	1634	1564
FY08-09: 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		376	391
Small Business Innovative Research/Small Business Technology Transfer Program		10	
<b>Total</b>	<b>1504</b>	<b>2020</b>	<b>1955</b>

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

**C. Acquisition Strategy** Not Applicable.