ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2006

BUDGET ACTIVITY	PE NUMBER AND TITLE
6 - Management support	**0605718A - Simulation & Modeling for Acq, Rqts, & Tng (SMART)**

	COST (In Thousands)	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate
	Total Program Element (PE) Cost	1853	5360	5441	4626	6893	8137	7918
S01	INTEGRATION & EVALUATION CENTER (IEC) SUSTAINMENT	1853	0	784	0	0	0	0
S02	HQDA DECISION SUPPORT TOOLS & SERVICES	0	1600	944	392	1525	1727	1831
S03	TRAC M&S TOOLS & SERVICES	0	2802	2550	2516	2976	4066	4256
S05	SIMULATION TECHNOLOGY (SIMTECH) PROGRAM	0	958	1163	1718	2392	2344	1831

A. Mission Description and Budget Item Justification: Simulation and Modeling for Acquisition, Requirements and Training (SMART) is a concept to accomplish the vision of a disciplined, collaborative environment to reduce costs and time of providing solutions for Army needs. SMART is a change in Army business practices that exploits modeling and simulation (M&S) and other information age technologies to ensure collaboration and synchronization of effort. SMART applies to development of tactics and doctrine, experimentation and exercises, traditional weapon system development, and to the assessment and transition of advanced technologies to operational capabilities. The overarching goal of SMART is to reduce the time and cost of providing improved capabilities to our warfighters. Emerging information-age technologies are revolutionizing our capabilities to collaborate among all stakeholders using data descriptions, digital representations, and virtual prototypes to improve understanding of required capabilities, shorten procurement time, reduce procurement and sustainment costs, and ultimately, reduce total lifecycle cost. SMART advocates the use of advanced technologies in concert with M&S to enable transformation through improved understanding of operational requirements, collaborative analyses of emerging technologies, and cross-domain participation in experiments and exercises. The following projects support Army institutionalization of SMART. The Joint Precision Strike Demonstration Integration and Evaluation Center (JPSD IEC) supports SMART through ongoing Advanced Concepts Technology Demonstrations (ACTD) and by maintaining a current suite of M&S programs. The JPSD IEC virtual environment enables the Army to test and evaluate concepts and technologies before making costly technology commitments. The JPSD IEC provides the ability to conduct distributed exercises and experiments in any combination of real tactical and operational systems with constructive and virtual simulations/simulators and state-of-the-art high fidelity models. There are two major projects under the HQDA Decision Support Tools and Services Project that support the Deputy Assistant Secretary of the Army for Cost and Economics (DASA-CE) and the Center for Army Analysis (CAA). The Integrated Performance Cost Model (IPCM) is a DASA-CE project that will identify major impacts on the total cost of ownership and will link cost analysis methodologies with engineering design methodologies and system requirements to allow analysts to develop cost estimates and perform cost -performance trades with the limited amounts of data available early in the program lifecycle. CAA assesses Army capabilities in a Joint Interagency Multinational (JIM) context and conducts the Total Army Analysis (TAA) - the foundation for Army resources. CAA provides analytical assistance for defining and justifying Army requirements in a JIM context and provides additional assistance in support of SMART. This project supports the Joint Campaign/Contingency Analysis (JCCA) Focus Area Collaborative Team (FACT), established by CAA to improve the M&S capability of representing Army capabilities at the campaign-level. The Training and Doctrine Command Analysis Center (TRAC) is an Army analysis agency that conducts research on potential military operations worldwide to inform leaders and support decisions on the most challenging issues facing the Army and the Department of Defense (DoD). This project provides TRAC with the resources to ensure the Army can develop and maintain a current, efficient M&S infrastructure to rapidly respond to the Army leadership on Joint warfighting experiments, analyses of courses of action, and doctrine development. The Army's Simulation Technology (SIMTECH) project enhances Current and Future Force effectiveness by inducing research organizations and agencies on an immediate/short-term basis to conduct high-priority, promising, simulation technology research initiatives that are outside the scope of the Small Business Innovative Research (SBIR) and Army Science and Technology programs. The SIMTECH project focuses simulation technology research initiatives on immediate, short-term Army needs and serves as a catalyst for

major technology breakthroughs in SMART, embedded simulation, rapid prototyping, commercial innovation, and related simulation technology.

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B. Program Change Summary	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2006)	1853	9437	8592
Current BES/President's Budget (FY 2007)	1853	5360	5441
Total Adjustments	0	-4077	-3151
Congressional program reductions		-4023	
Congressional rescissions		-54	
Congressional increases			
Reprogrammings			
SBIR/STTR Transfer			
Adjustments to Budget Years			-3151

Change Summary Explanation: FY 2006 - Congressional reduction due to program growth. FY 2007 - funds realigned to support the Tools and Services programs and the Simulation Technology Program.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2006

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - Management support	**0605718A - Simulation & Modeling for Acq, Rqts, & Tng (SMART)**	**S03**

COST (In Thousands)		FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate
S03	TRAC M&S TOOLS & SERVICES	0	2802	2550	2516	2976	4066	4256

A. Mission Description and Budget Item Justification: This project will support development of modeling and simulation (M&S) software, hardware, and infrastructure for general use by the Army's Training and Doctrine Command Analysis Center (TRAC) and the Army at large. This project will develop descriptions of, and implement technological solutions for, analysis tools to enable emerging technology assessment during concept exploration, and will develop infrastructure and enabling technologies to support Army Transformation. These are the critical efforts for analysis of futures work to justify Army requirements, assess the worth of concepts and alternative approaches to satisfy those requirements, and to develop current and emerging warfighting doctrine from tactical to operational levels of warfare.

Accomplishments/Planned Program	FY 2005	FY 2006	FY 2007
Advance maneuver sustainment force representation in combat models and simulations	0	617	543
Develop knowledge, models, and data for a strongly networked Future Force Command and Control, Communications and Computers, Intelligence, Surveillance and Reconnaissance (C4ISR).	0	252	222
Advanced simulation of urban operations (complex environments, physical processes and individual and unit behaviors)	0	504	444
Develop algorithms and data that lead to better representation of the threat, non-combatants, and factions	0	700	699
Develop algorithms and data to better represent joint capabilities and the Army's roles as part of a joint force	0	112	99
Develop algorithms and data that lead to better representation of space capabilities and their contributions to the joint fight	0	561	493
Develop algorithms and data for representing individual soldier behaviors and interactions on the battlefield	0	56	50
Total	0	2802	2550

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2006

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - Management support	**0605718A - Simulation & Modeling for Acq, Rqts, & Tng (SMART)**	**S05**

COST (In Thousands)		FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate
S05	SIMULATION TECHNOLOGY (SIMTECH) PROGRAM	0	958	1163	1718	2392	2344	1831

A. Mission Description and Budget Item Justification: The goal of the Army's Simulation Technology (SIMTECH) program is to enhance Current and Future Force effectiveness by providing the ability for the Army to induce research organizations and agencies on an immediate/short-term basis to conduct high-priority, promising, simulation technology research initiatives that are outside the scope of the Small Business Innovative Research (SBIR) and the Army's Science and Technology programs. The SIMTECH program provides a source of competitive funds to Army research organizations and agencies to stimulate high quality, innovative research with significant opportunity for payoff in Army warfighting capability. The SIMTECH program focuses the simulation technology research initiatives on an immediate short-term Army need by including a theme in the annual call for proposals. The SIMTECH program serves as a catalyst for major SMART related technology breakthroughs in embedded simulation, collaboration, rapid prototyping, commercial innovation, and related simulation technology. Successful SIMTECH projects are typically transitioned to start-up projects and existing Army simulation programs. The work in this program is performed by the Army Materiel Command, the Army Corps of Engineers Engineer Research and Development Center, the Army Research Institute, the Army Training and Doctrine Command Analysis Center, and other Army agencies.

Accomplishments/Planned Program	FY 2005	FY 2006	FY 2007
Specific FY06 and FY07 requirements to be determined at the FY06 and FY07 SIMTECH Council of Colonels scheduled for the summer preceding each fiscal year.	0	958	1163
Total	0	958	1163