

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2007

BUDGET ACTIVITY 6 - Management support		PE NUMBER AND TITLE 0605718A - Simulation & Modeling for Acq, Rqts, & Tng (SMART)						
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
Total Program Element (PE) Cost	3945	5380	5342	5360	5483	4077	3736	3818
S01 INTEGRATION & EVALUATION CENTER (IEC) SUSTAINMENT		775						
S02 HQDA DECISION SUPPORT TOOLS & SERVICES	304	933	1758	1679	1718	502		
S03 TRAC M&S TOOLS & SERVICES	2710	2521	2069	2125	2173	2064	2076	2124
S05 SIMULATION TECHNOLOGY (SIMTECH) PROGRAM	931	1151	1515	1556	1592	1511	1660	1694

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 the 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. There is currently one project under the HQDA Decision Support Tools and Services that support the Deputy Assistant Secretary of the Army for Cost and Economics (DASA-CE). 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. 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 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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6 - Management support

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<u>B. Program Change Summary</u>	FY 2006	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2007)	5360	5441	4626	6893
Current BES/President's Budget (FY 2008/2009)	3945	5380	5342	5360
Total Adjustments	-1415	-61	716	-1533
Congressional program reductions		-21		
Congressional rescissions				
Congressional increases				
Reprogrammings	-1415	-40		
SBIR/STTR Transfer				
Adjustments to Budget Years			716	-1533

Change Summary Explanation: Funding - FY 2009: Funds realigned to higher priority programs.

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BUDGET ACTIVITY 6 - Management support		PE NUMBER AND TITLE 0605718A - Simulation & Modeling for Acq, Rqts, & Tng (SMART)					PROJECT S02		
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	
S02 HQDA DECISION SUPPORT TOOLS & SERVICES	304	933	1758	1679	1718	502			

A. Mission Description and Budget Item Justification: The HQDA Decision Support Tools and Services project provides decision support tools for the Army Staff and Forward Operating Agencies assigned to the Headquarters, Department of the Army. Currently there is one service being developed. The Integrated Performance Cost Model (IPCM) is an Army decision support tool, sponsored by the Deputy Assistant Secretary of the Army for Cost and Economics (DASA-CE), which conducts integrated analyses of system capabilities, performance, technology, acquisition programmatic strategy, and cost estimating. IPCM is a generic integrated analysis framework that enables analysts to optimize performance, cost/funding, and acquisition strategies. The objective for IPCM is to enable the dynamic discovery of requirements, cost effectiveness, engineering, and logistics optimization that seamlessly exchanges information amongst various models and databases. The resulting solution increases the quality of military worth and supportability of fielded war-fighting systems while reducing total ownership cost throughout the entire life cycle. The use of models and simulations early in the life cycle, when capabilities are being evaluated, results in a reduction of time, resources, and risk associated with the acquisition process, and provides for a much larger analysis of trade-space than the current analysis process. The robust analysis that IPCM will provide will significantly improve available information usage, and support faster, more thoroughly understood decision making capabilities for Army leaders to make informed acquisition decisions.

<u>Accomplishments/Planned Program:</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Integrated Performance Cost Model (IPCM) - In FY06, provided an IPCM Prototype that included a Federated Intelligent Product Environment (FIPER) infrastructure. Provided software and licenses for FIPER and DB2/WebSphere on the DASA-CE server. Provided stand-alone IPCM/FIPER analysis capability at the Tank-Automotive and Armaments Command (TAACOM). In FY07, will complete the component level cost model. Test and validate the component level cost model and populate the database. In FY08, provide prototypes to TAACOM. In FY08 and FY09, complete additional cost estimating relationship data collection, model integration and standardization.	304	933	1758	1679
Total	304	933	1758	1679

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BUDGET ACTIVITY 6 - Management support	PE NUMBER AND TITLE 0605718A - Simulation & Modeling for Acq, Rqts, & Tng (SMART)					PROJECT S03			
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	
S03 TRAC M&S TOOLS & SERVICES	2710	2521	2069	2125	2173	2064	2076	2124	

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.

<u>Accomplishments/Planned Program:</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Advance maneuver sustainment force representation in combat models and simulations	525	514		
Develop knowledge, models, and data for a strongly networked Future Force Command and Control, Communications and Computers, Intelligence, Surveillance and Reconnaissance (C4ISR).	252	222		
Advanced simulation of urban operations (complex environments, physical processes and individual and unit behaviors)	504	444		
Develop algorithms and data that lead to better representation of the threat, non-combatants, and factions	700	699		
Develop algorithms and data to better represent joint capabilities and the Army's roles as part of a joint force	112	99		
Develop algorithms and data that lead to better representation of space capabilities and their contributions to the joint fight	561	493		
Develop algorithms and data for representing individual soldier behaviors and interactions on the battlefield	56	50		
FY 08 and 09 funds to be distributed by the Advanced Concepts and Requirements (ACR) Domain Focused Area Collaborative Team (FACT) Summit during the year of execution.			2069	2125
Total	2710	2521	2069	2125

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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	
S05 SIMULATION TECHNOLOGY (SIMTECH) PROGRAM	931	1151	1515	1556	1592	1511	1660	1694	

A. Mission Description and Budget Item Justification: The goal of the Army 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 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.

<u>Accomplishments/Planned Program:</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Specific FY08-13 requirements will be determined at the SIMTECH Council of Colonels scheduled for the summer preceding each fiscal year.	931	1151	1515	1556
Total	931	1151	1515	1556