

OSD RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

Date: February 2007

APPROPRIATION/ BUDGET ACTIVITY RDT&E/ Defense Wide BA# 3		PE NUMBER AND TITLE 0603670D8Z - Human, Social and Culture BehaviourModeling (HSCB) Advanced Development						
Cost (\$ in Millions)	FY 2006 Actual	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Total Program Element (PE) Cost	0.000	0.000	9.000	9.400	11.800	12.200	20.400	23.200
P370 Human, Social and Culture BehaviourModeling (HSCB) Advanced Development	0.000	0.000	9.000	9.400	11.800	12.200	20.400	23.200

A. Mission Description and Budget Item Justification: (U) Current military operations need and future operations will demand the capability to understand the social and cultural terrain and the various dimensions of human behavior within these terrains. Behaviors in the social and cultural terrain context extend across the spectrum from adversaries to our Joint U.S. forces, with our coalition partners, and with government and non-government organizations. USG and DoD capstone policy and guidance are driving this need -- as articulated in NSPD-44, QDR 2006, and DoDD 3000.05 (Stability, Security, Transition and Reconstruction (SSTR)). Science and resulting technologies form a resource and enabler for success in this area. Advanced Development in Human Social Culture Behavior Modeling (HSCB) and its counterparts in BA2 and BA4, will demonstrate technologies that enhance existing toolsets and create new toolsets for human terrain understanding and forecasting in 4 application pillars: intelligence analysis; operations analysis/planning; training; and joint experimentation. Early priorities will include an emphasis on demonstration in relevant operational systems (e.g. Mapping of the Human Terrain JCTD). The program will demonstrate visualization toolsets, modeling systems, and training systems capable of mapping the complex human terrain that will be encountered in both current and future military and stability operations.

B. Program Change Summary	FY 2006	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2007)				
Current BES/President's Budget (FY 2008/2009)	0.000	0.000	9.000	9.400
Total Adjustments	0.000	0.000	9.000	9.400
Congressional Program Reductions				
Congressional Rescissions				
Congressional Increases				
Reprogrammings				
SBIR/STTR Transfer				
Other			9.000	9.400

C. Other Program Funding Summary: Not Applicable.

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0603670D8Z - Human, Social and Culture Behaviour Modeling (HSCB) Advanced Development

D. Acquisition Strategy: Not Applicable.

E. Performance Metrics: Not Applicable.

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Cost (\$ in Millions)		FY 2006 Actual	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
P370	Human, Social and Culture Behaviour Modeling (HSCB) Advanced Development	0.000	0.000	9.000	9.400	11.800	12.200	20.400	23.200

A. Mission Description and Project Justification: (U) This project is focused on demonstrating general-use , cross-domain capabilities/tools to support all HSCB applications. The project will develop: Computational modeling capabilities; Visualization software toolsets; and Training/mission rehearsal systems that provide forecasting capabilities for socio-cultural (human terrain) responses at the strategic, operational and tactical levels. This project will develop, integrate and demonstrate technologies that provide cultural understanding/overlays in existing intelligent, influence operations, and operations planning systems. This project will develop, integrate and demonstrate training and mission rehearsal capabilities that go beyond strategic level planning tools (to the operational and tactical level), providing broader, more in depth training/retention capability.

Modeling Capabilities that will generate and demonstrate validation of synthetic adversaries to populate "what if" analyses for forecasting reactions to a defined class of adversaries to U.S./coalition miStrategic decision making tools that account for political, religious, cultural, and other factors. Integration of a common architecture visualization tool that vertically integrates cultural information into a military operational environment.

Visualization software toolsets that will be used as a strategic decision making tool that will account for political, religious, cultural, and other factors. Integration of a common architecture visualization tool that vertically integrates cultural information into a military operational environment.

Training/Mission rehearsal systems capable of using flexible underlying cultural models to train at the operational/tactical level. Integration and demonstrations of social, cultural and human behavior/cognition skills training systems for operational and strategic planning personnel in a coalition force context.

B. Accomplishments/Planned Program:

Accomplishment/Planned Program Title	FY 2006	FY 2007	FY 2008	FY 2009
Modeling Capabilities	0.000	0.000	3.000	3.000

Generation and demonstration of validated synthetic adversaries to populate "what if" analyses for forecasting reactions to a defined class of adversaries to U.S./coalition military, economic, or political actions. Integration and demonstration of decision making support tools within Battle Command Planning/Execution/Re-Planning systems for political, religious, cultural and other factors. Development of tools and software products to integrate socio-cultural models and information into existing intelligence, and Command and Control systems.

FY 2008 Plan: Integration and demonstration of validated, human terrain forecasting models that enable examination of 2nd, 3rd, and higher order effects of kinetic and non-kinetic actions within a theater in support of Effects Based Operations. Current integrated software for human social, cultural and behavior modeling (HSCB) is focused on intelligence applications using existing social network modeling tools

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and relatively data poor/outdated theory based models. This work will begin to provide a more robust, generalizable set of DoD centric models to support decision aids and toolsets for command and control, intelligence, influence operations and operational planning.

FY 2009 Plan: Synthetic forces are useful for doing 'what if' exercises for planning purposes during Phase 0, and during ongoing contingency planning. The synthetic forces used for these wargames/planning exercises are often not an accurate representation of adversary or green forces, and their reactions to U.S./coalition actions. This project will demonstrate validated regional/cultural models in planning exercises.

Accomplishment/Planned Program Title	FY 2006	FY 2007	FY 2008	FY 2009
Visualization Software Toolsets	0.000	0.000	4.000	4.000

Visualization software toolsets that will be used as a strategic decision making tool that will account for political, religious, cultural, and other factors. Integration of a common architecture visualization tool that vertically integrates cultural information into a military operational environment.

FY 2008 Plan - Demonstration of integrated process and tool suites that allow for planning at the strategic level using real-time human, social, culture, and behavior models focused on conflict resolution and regional stability. DoD strategic planning requires accurate representation of the full range of national power, including multi-agency and non-military actions. It also requires the ability to accurately represent the outcomes of those actions in the target region/population. This project will demonstrate a decision-making toolset that includes HSCB factors

FY 2009 Plan - Common, generalizable (strategic to tactical) tools for visualization of DIME-PMESII or HSCB factors on the battlefield, or during Security, Stability, Transition and Reconstruction phases do not exist. This project will do an initial demonstration of a common architecture for visualization of these effects, with the ability for commanders to "drill down" from regional to local views, and vice versa.

Accomplishment/Planned Program Title	FY 2006	FY 2007	FY 2008	FY 2009
Training/Mission Rehearsal Systems	0.000	0.000	2.000	2.400

Training systems capable of using flexible underlying cultural models to train at the operational/tactical level. Integration and demonstrations of social, cultural and human behavior/cognition skills training systems for operational and strategic planning personnel in a coalition force context.

FY 2008 Plan - Current methods and procedures for integrating cultural information into military operations do not satisfy the requirements for ongoing operations and are not flexible enough to rapidly deliver Just In Time training for complex new regions of interest, and relatively new mission areas (e.g. transition and reconstruction). This project will integrate and demonstrate training technologies to deliver socio-cultural understanding and skills needed by individuals, small units, and coalitions in current and future military operations.

FY 2009 Plan - Socio-cultural factors impact not only U.S.-adversary actions and reactions, but also impact the capability of U.S forces to work effectively with coalition/multi-national forces in the global war on terror. Virtual training and mission rehearsal/exercises provides leaders with some opportunity to develop teamwork with coalition forces who are physically separated from U.S. forces. However, the events do not provide the opportunity to develop teamwork with forces who are culturally, or socially separate from our own forces. Cultural and language barriers can create problems with understanding operational orders. This project will demonstrate distributed training technologies to speed the development of socio-cultural skills in coalitions in current military operations.

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C. Other Program Funding Summary			FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
R&D BA 2	0602670D8Z	HSCB Applied Research	0.000	0.000	0.007	0.007	0.009	0.010	0.016	0.019	0.000	0.070
R&D BA 4	0604670D8Z	HSCB Research and Engineering	0.000	0.000	0.005	0.006	0.007	0.007	0.013	0.015	0.000	0.055

Comment:

D. Acquisition Strategy: Not Applicable.

E. Major Performers Not Applicable.