

OSD RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

APPROPRIATION/ BUDGET ACTIVITY
RDTE, Defense Wide BA 03

PE NUMBER AND TITLE
0603670D8Z - Human, Social and Culture Behavior Modeling (HSCB) Advanced Development

COST (\$ in Millions)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
P370 Human, Social and Culture Behavior Modeling (HSCB) Advanced Development		2.974	9.381	11.689	12.080	20.204	22.978

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 four 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.

<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2008)		9.000	9.400
Current BES/President's Budget (FY 2009)		2.974	9.381
Total Adjustments		-6.026	-0.019
Congressional Program Reductions		-6.026	
Congressional Rescissions			
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer			
Other			-0.019

<u>C. Other Program Funding Summary</u>	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
PE 0602670D8Z BA 2 HSCB Applied Research		6.246	7.685	9.609	9.902	16.539	18.818

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

PE 0604670D8Z BA 4 HSCB Research & Engineering

0.991

5.991

7.132

7.823

12.875

15.621

Comment:

D. Acquisition Strategy Not applicable for this item.

E. Performance Metrics: Not Applicable.

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COST (\$ in Millions)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	
P370 Human, Social and Culture Behavior Modeling (HSCB) Advanced Development		2.974	9.381	11.689	12.080	20.204	22.978	

A. Mission Description and Budget Item 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 mission Strategic 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:

<u>Accomplishments/Planned Program Title:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Modeling Capabilities		1.500	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 a validated, human terrain forecasting modeling approach that enables the examination of second, third, 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 and relatively data poor/outdated theory based models. This work will begin to provide an initial set of DoD centric models and tools to support decision

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aids and toolsets for command and control, intelligence, influence operations and operational planning. FY08 efforts will focus on developing models within a specified operational domain/scenario.				
FY 2009 Plan: Expansion and validation of HSCB related modeling approaches and development of more generalizable solutions for multiple military, kinetic and non-kinetic domains. This work will address both horizontal (across user community) and vertical (tactical to strategic) generalization of HSCB models.				
<u>Accomplishments/Planned Program Title:</u>		<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Visualization Software Toolsets			0.500	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 the feasibility of integrating HSCB process and software into strategic level conflict resolution and regional stability planning tools. 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 improved decision-making toolsets 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.				
<u>Accomplishments/Planned Program Title:</u>		<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Training/Mission Rehearsal Systems			0.974	2.381
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 for individuals and small units 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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<u>C. Other Program Funding Summary</u>			FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
R&D	0602670D8Z	HSCB Applied Research BA 2		6.246	7.685	9.609	9.902	16.539	18.818
R&D	0604670D8Z	HSCB Research and Engineering BA 4		0.991	5.991	7.132	7.823	12.875	15.621

Comment:

D. Acquisition Strategy Not applicable for this item.

E. Major Performers Not applicable for this item.