Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Office of Secretary Of Defense											Date: March 2014	
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*					**R-1 Program Element (Number/Name)** PE 0604670D8Z *I Human Social Culture Behavior (HSCB) Modeling Research and Engineering*							
COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	-	4.492	2.000	-	-	-	-	-	-	-	Continuing	Continuing
P670: *Human Social Culture Behavior (HSCB) Modeling Research and Engineering*	-	4.492	2.000	-	-	-	-	-	-	-	Continuing	Continuing

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

The OSD HSCB Modeling Program is a vertically integrated effort to research, develop, and transition technologies, tools, and systems to programs of record and users in need. The Program exists to optimize U.S. forces' ability to perform population-centric sensing, understand behaviors driven by social and cultural variables, and select effective courses of action in the full range of military operations. Program research will enhance population-centric intelligence, surveillance, and reconnaissance (ISR) capabilities for understanding the increasingly complex global environment to address national strategic challenges such as instability, aggression, proliferation of weapons of mass destruction, and violent extremism. In three integrated program elements (PEs), the Program will conduct applied research, mature and demonstrate advanced technology, and develop transitionable methods, technology, tools, and prototypes. Work under PE 0604670D8Z will create transition ready software tools that will help intelligence analysts, operations analysts, operations planners, wargamers, and others represent, understand, and forecast sociocultural behavior at the strategic, operational, and tactical levels. This program focuses on maturing, hardening, and validating human, social, culture, and behavior modeling software for transition to meet the needs of the warfighter, integration into the architectures of existing programs of record, and/or maturing software via open architectures to allow broad systems integration. The Program provides a development to product transition pathway for sociocultural models, tools, and capabilities to rapidly meet immediate and emerging warfighter needs. The work supports the testing, validation, and transition of model-based technology into existing and developing systems in coordination with Program Executive Offices/Program Managers, Combatant Commanders, Joint and Service organizations, warfighters in need, and other transition customers. The Program will mature sociocultural relevant data and tools to provide essential sociocultural understanding and forecasting capabilities at the strategic, operational and tactical levels.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Office of Secretary Of Defense					Date: March 2014
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*			**R-1 Program Element (Number/Name)** PE 0604670D8Z *I Human Social Culture Behavior (HSCB) Modeling Research and* *Engineering*		
B. Program Change Summary ($ in Millions)	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO**	**FY 2015 Total**
Previous President's Budget	5.131	-	-	-	-
Current President's Budget	4.492	2.000	-	-	-
Total Adjustments	-0.639	2.000	-	-	-
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-0.435	-			
• Congressional Rescissions	-0.007	-			
• Congressional Adds	-	2.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.059	-			
• SBIR/STTR Transfer	-0.136	-			
• Other Program Adjustments	-0.002	-	-	-	-

| Exhibit R-2A, RDT&E Project Justification: PB 2015 Office of Secretary Of Defense | | | | | | | | | | | Date: March 2014 | |

| Appropriation/Budget Activity
0400 I 4 | R-1 Program Element (Number/Name)
PE 0604670D8Z I Human Social Culture Behavior (HSCB) Modeling Research and Engineering | Project (Number/Name)
P670 I Human Social Culture Behavior (HSCB) Modeling Research and Engineering |

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
P670: Human Social Culture Behavior (HSCB) Modeling Research and Engineering	-	4.492	2.000	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

\# The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

This Program will create transition-ready software tools that will help intelligence analysts, operations analysts, operations planners, wargamers, and others represent, understand, and forecast sociocultural behavior at the strategic, operational, and tactical levels. The Program focuses on maturing, hardening, and validating human, social, culture, and behavior modeling software for transition to meet the needs of the warfighter, integration into the architectures of existing programs of record, and/or maturing software via open architectures to allow broad systems integration. The Program provides a development to product transition pathway for sociocultural models, tools, and capabilities to rapidly meet immediate and emerging warfighter needs. The work supports the testing, validation, and transition of model-based technology into existing and developing systems in coordination with Program Executive Offices/Program Managers, Combatant Commanders, Joint and Service organizations, warfighters in need, and other transition customers. The Program will mature sociocultural relevant data and tools to provide essential forecasting capabilities at the strategic, operational, and tactical levels.

B. Accomplishments/Planned Programs ($ in Millions)

	FY 2013	FY 2014	FY 2015
Title: Modeling Capabilities	3.091	1.000	-

Description: Mature and deliver sociocultural modeling capabilities for integration into existing DoD systems. Conduct validation testing of HSCB model based applications. Complete development of sentiment analysis (iSENT) component into the Worldwide Integrated Crisis Early Warning System (W-ICEWS), increase the volume and range of data sources, and increase sensitivity of the core instability detection capability. Extend and complete sentiment analysis component to social media. Extend and complete SPECTRUM capabilities for countering violent extremism, with enhanced organization tracking, mining of social media, and coverage of additional regions. Demonstrate and complete prototype social radar in the Distributed Common Ground System-Army (DCGS-A) or comparable environment for one or more of the following use cases: counterinsurgency, counterterrorism, countering violent extremism, countering-weapons of mass destruction, countering transnational criminal organizations, or mitigating the effect of adversarial nation state influence.

FY 2013 Accomplishments:
Integrated the iSENT tool into the Worldwide Integrated Crisis Early Warning System (W-ICEWS) in U.S. Strategic Command program of record. Achieved high accuracy for English and Spanish, and a new Chinese sentiment model in development.

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Exhibit R-2A, **RDT&E Project Justification:** PB 2015 Office of Secretary Of Defense		**Date:** March 2014
Appropriation/Budget Activity 0400 *I* 4	**R-1 Program Element (Number/Name)** PE 0604670D8Z *I Human Social Culture Behavior (HSCB) Modeling Research and Engineering*	**Project (Number/Name)** P670 *I Human Social Culture Behavior (HSCB) Modeling Research and Engineering*

B. Accomplishments/Planned Programs ($ in Millions)	**FY 2013**	**FY 2014**	**FY 2015**
Implemented and transitioned technology to gather and process news and social media data. Supported a variety of operational challenges using HSCB technology with high reported user utility. Integrated social radar prototypes into the Ozone Widget Framework (OWF), which is compatible with the Army's Distributed Common Ground System (DCGS-A). Applied social radar prototypes as proof of concept to support the Military Information Support Operations (MISO) mission to counter violent extremism. Tested the prototypes to support knowledge management and situational awareness for countering weapons of mass destruction. The social radar components will transition to Integrated Strategic Planning and Analysis Network (ISPAN) programs of record.			
FY 2014 Plans: Further develop W-ICEWS capabilities by improving sentiment accuracies of English and Spanish language models to meet 80% target accuracy goal. Add Arabic model to include complex Arabic dialect feature analysis.			
Title: Data Collection	1.051	0.700	-
Description: Develop and test methods and tools for collection of sociocultural behavior data, including and especially in denied areas. Demonstrate resources and tools for extraction, integrated analysis, and fusion of data from open sources at scale with particular focus on social media. Support development and testing of architectures and systems to enable access to structured, validated sociocultural behavior data across tactical to strategic levels. Complete development of and demonstrate ability to ingest, structure, and visualize multiple data modalities at scale, in real-time, or near real-time to support both short-term and long-term instability monitoring. Complete development and demonstration of transition-ready automated data collection, management, translation, and extraction tools to service HSCB models. *FY 2013 Accomplishments:* W-ICEWS and iSENT programs ingest news, blogs, and social media data either weekly (W-ICEWS) or in near real-time (iSENT). W-ICEWS ingested over 30 million news articles covering the last 13 years. iSENT ingested 25 million documents per month, including social media data. The ingest pipelines supported fusion and further analysis of the data, including sentiment analysis, instability monitoring, forecasting of events of interest, an event browser, and other analysis tools supporting both short-term and long-term analytics. The programs are in operational use by a variety of government organizations and hosted at U.S. Southern Command and will be transitioned to the Global Adaptive Planning Collaborative Information Environment (GAP CIE) ISPAN program of record. Validated social radar tools and methods for collecting sociocultural behavior data from open sources, including social media. Applied tools for extraction, integrated analysis, and fusion of data at scale from denied areas. Demonstrated the social radar tools in near real-time to support short-term and long-term instability monitoring. *FY 2014 Plans:*			

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Exhibit R-2A, **RDT&E Project Justification:** PB 2015 Office of Secretary Of Defense		**Date:** March 2014
Appropriation/Budget Activity 0400 *I* 4	**R-1 Program Element (Number/Name)** PE 0604670D8Z *I Human Social Culture Behavior (HSCB) Modeling Research and Engineering*	**Project (Number/Name)** P670 *I Human Social Culture Behavior (HSCB) Modeling Research and Engineering*

B. Accomplishments/Planned Programs ($ in Millions)	**FY 2013**	**FY 2014**	**FY 2015**
Extend iSENT capability to automatically identify potential disinformation and quantify the spread and/or influence of that disinformation based on content and degree of social networking reach. Develop dashboard capability that allows the user to configure a custom dashboard that includes automated alerts, social momentum gauges and graphs, real-time streaming of social and regular media, and television feeds.			
Title: Risk Reduction *Description:* Conduct the risk reduction activities necessary to ensure that HSCB technologies are validated, accurate, and address user/program of record requirements. Continue to apply existing processes for evaluating discrete research projects. Gather data necessary to populate existing Program level measures of effectiveness. Develop, complete, and transition rapid prototypes to demonstrate technology effectiveness toward new U.S. Government challenges. Quantify effect of HSCB technologies on user effectiveness and efficiency. *FY 2013 Accomplishments:* W-ICEWS and iSENT programs both periodically report rigorous statistical measures of precision and recall; both experienced a rapid increase in the user base due to high demand from multiple Combatant Commands, the State Department, and intelligence community users. Both programs participated in numerous operational scenarios, including the U.S. Special Operations Command MISO experiment. Validated social radar technologies to ensure accuracy and to ensure that they addressed user requirements. Used social radar technologies during repeated demonstrations to gather data necessary to populate program-level measures of effectiveness. As evidence of the readiness to meet U.S. government challenges, transition of these technologies is planned for use by government and private organizations. *FY 2014 Plans:* Conduct risk reduction activities necessary to ensure that HSCB technologies are validated, accurate, and address user/program of record requirements. Continue to apply existing processes for evaluating research projects.	0.350	0.300	-
Accomplishments/Planned Programs Subtotals	4.492	2.000	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• PE 0602670D8Z BA 2: *HSCB Applied Research*	5.049	2.000	-	-	-	-	-	-	-	Continuing	Continuing
• PE 0603670D8Z BA 3: *HSCB Advanced Development*	6.994	2.000	-	-	-	-	-	-	-	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Office of Secretary Of Defense		Date: March 2014
Appropriation/Budget Activity 0400 *I* 4	**R-1 Program Element (Number/Name)** PE 0604670D8Z *I Human Social Culture Behavior (HSCB) Modeling Research and Engineering*	**Project (Number/Name)** P670 *I Human Social Culture Behavior (HSCB) Modeling Research and Engineering*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost

Remarks

D. Acquisition Strategy

The Program produces software prototypes configured for use in programs such as the DCGS-A. The program is executed by a Broad Agency Announcement (BAA) and a targeted Request for Proposals (RFP) process. The BAA and RFPs were issued in FY 2011. Proposals were solicited from all DoD organizations, other federal agencies, and the commercial sector. Proposals were selected using review panels.

E. Performance Metrics

N/A

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