**HSCB Thrust** [**http://bit.ly/mlvdLX**](http://bit.ly/mlvdLX)

The **Office of Naval Research (ONR)** Human Social, Culture and Behavior Modeling Program invests in research on building capability through the development of a knowledge base, building models, and creating training capacity in order to understand, predict, and shape human behavior cross-culturally. The program seeks to:

 **Understand the human, social, cultural, and behavioral factors that influence human behavior**. Improve our ability to model these influences and understand their impact on human behavior at the individual, group, and society-level of analysis.

 Improve computational modeling and simulation capabilities, visualization software toolsets, and training/mission rehearsal systems that provide forecasting capabilities for socio-cultural responses.

 **Develop and demonstrate an integrated set of model description data (metadata), information systems, and procedures that will facilitate assessment of the software engineering quality of sociocultural behavior models, their theoretical foundation and the translation of theory into model constructs**.

[**http://bit.ly/kede8u**](http://bit.ly/kede8u)

 **Code 30,** All Programs**, C4,** Fires. Force Protection. HSCB

 HPT&E, ISR, Logistics, Maneuver. Image - Blue Technology Map, **C4 Thrust**

The Office of Naval Research (ONR) Command, Control, Computers and Communication **(C4) Thrust** seeks to **improve C4** capabilities for naval warfighters with an emphasis on mall units, asymmetric and irregular warfare, information analysis and communication, and istributed operations. Its technology investment areas include network-centric warfare and interoperability, over-the-horizon communications gateways, and small-unit technologies.

In the area of **network-centric warfare** and **interoperability**, ONR seeks to nearly ubiquitous communications and availability of information for naval warfighters, particularly in austere environments. This technology area of investment includes:

 **Mobility management**: Creating networks that offer high reliability and secure access to the network by authorized mobile users.

 Information assurance application tolerance: **Providing access to needed information regardless of the source**.

In the area of over-the-horizon communications, ONR seeks to provide long-reach communications enabling technologies that allow lower-echelon warfighters to exploit the global network. This would include beyond-line-of-sight (BLoS) communications, which provide reach-back to higher echelons by all users, and networked RF distribution systems, which would provide access to the Global Information Grid services by appropriate echelons.

In the area of small-unit technologies, ONR seeks to close technology gaps to allow small-unit warfighters to gain timely, accurate, and nearly complete situational awareness. This technology investment area includes:

Restricted environment communications: **Enabling intra-unit and inter-echelon communications under all conditions.**

Advanced communications enablers: Providing user-centric provision of needed information.

**Blue Force tracking/personnel location indicators: Creating ready sharing of position location and intelligence.**

C4 Science and Technology Challenges

 Net-Centric Warfare/Interoperability

 Architecture suitable for authentication of users and platforms in a MANET environment over current and emerging tactical communications networks and across security domains

 Transport mechanisms for a secure, light weight service oriented architecture with discovery, access, and mediation, in order to extend those capabilities to lower echelon warfighters in a tactical wireless environment

Small Unit Technologies

 Novel low-loss, high selectivity, high-power tunable filter technology

 Lightweight decision aids using content management and innovative presentation methods to effectively provide situational awareness and C2 capabilities to distributed warfighters

 Compact, affordable, robust and reliable position, navigation, and timing (PNT) solution, that can determine precise and absolute position with few external references in restricted environments, as either a supplement or surrogate to GPS

The Expeditionary Maneuver and Combating Terrorism Department welcomes innovative ideas and white papers in response to the ONR long-range broad agency announcement.