

**12<sup>th</sup> ICCRTS**  
**“Adapting C2 to the 21<sup>st</sup> Century”**

**An Experimental Framework for Evaluating Semantic Interoperability**  
**Supporting the Mobility Common Operational Picture**

**Robin K. Burk, Curtis L. Blais, Burhman Q. Gates, Niki C. Goerger, Joyce A. Nagle**

**POC:**  
**Robin Burk, Assistant Professor**  
**Department of Electrical Engineering & Computer Science**  
**U.S. Military Academy**  
**Bldg. 601**  
**West Point, NY 10996**  
**845 938-3987**  
**DSN 688-3987**  
**Robin.Burk@usma.army.mil**

## **ABSTRACT**

The Army's Assured Mobility concept, which concerns the ability to deploy, move, and maneuver freely at will to achieve commander's intent, calls for establishing the mobility common operational picture (M-COP). We have defined the M-COP as a subset of the COP consisting of relevant tactical movement and maneuver data and information shared by more than one command. The initial scope has focused on information supporting ground vehicle mobility planning, including autonomous/robotic vehicles. The M-COP data model includes representation of own-force mobility capabilities, weather, terrain, intelligence on opposition force disposition, obstacles to movement, and local (civilian) events and behaviors that can affect own-force mobility.

In the emerging Global Information Grid (GIG), M-COP data and information will be available to the spectrum of users, software agents, and software systems through discoverable and callable web-based services. This necessitates automated capabilities to interpret data and information and a level of interoperability for exchanging and processing these. Elements of the M-COP must have a strong semantic formalization for human understanding and effective software employment. This paper describes the design and execution of an experimental framework for implementing and evaluating semantic representations of M-COP information to explore alternative approaches.

*This abstract, the full paper and the research they describe are unclassified.*

### **Suggested tracks:**

Track 4: Cognitive and Social Issues

Track 8: C2 Technologies and Systems

Track 6: C2 Metrics and Assessment