

12TH ICCRTS

“Adapting C2 to the 21st Century”

21st Century C2 Modeling, Simulation, & Analysis

Topics

Modeling and Simulation

C2 Metrics and Assessment

Network-Centric Experimentation and Applications

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ABSTRACT

The Department of Defense has developed a next-generation joint simulation that represents C4ISR explicitly and bases its decisions on perceptions rather than ground truth. In the past two years, the Joint Analytical System (JAS) has passed a series of increasingly complex tests to confirm that it can both provide the warfighting outcomes of current legacy models and extend that analysis to examining the effects of non-kinetic warfare techniques such as information operations. JAS is stochastic and runs much faster than real time, but it can be slowed to wall clock time to allow inserting human decisions-makers at any of its simulated C2 nodes. While recent work for OSD/NII is classified, many of the techniques for evaluating communications systems and their ability to withstand both brute force and sophisticated electronic attacks can be demonstrated in an unclassified Homeland Defense scenario. JAS has also been used by Joint Forces Command (JFCOM) J9 to evaluate new warfighting concepts and provides an effective platform for examining information operations in the context of time-critical joint warfights, including disinformation, misinformation, signals intelligence, and electronic warfare. Because JAS can operate on a laptop, a working version of the scenario can be demonstrated along with the presentation.

DRAFT OUTLINE

- I. Introduction to JAS and its availability to users as GFS from JFCOM J9.
- II. Description of the unclassified Homeland Defense scenario (based on one originally developed by SPAWAR).
- III. Description of the explicit C2 information required and the communications networks supporting both the terrorists and US forces involved in preventing or reducing the effectiveness of a coordinated terrorist attack.
- IV. Methods used for evaluating alternative Information Warfare options for disrupting the attack in the context of actions and reactions by both sides.
- V. Insights from multiple simulations runs concerning shortcomings in command and control structures, intelligence collection, and the effectiveness of information operations as an adjunct to kinetic warfare in non-traditional warfare.