12TH ICCRTS
"Adapting C2 to the 21st Century"

Course of Action Scoring and Analysis

Topics: C2 Modeling and Simulation, C2 Analysis, C2 Architecture

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Abstract

The impacts of implementing Effects Based Operations (EBO) on Course of Action (COA) development and evaluation will be significant. Because EBO focuses on producing effects from military activities, as opposed to the direct result of attacking targets, there is an opportunity to develop a significantly higher number of COAs that achieve the desired effects. Consequently, EBO planning will significantly increase the number of evaluated COAs and the depth of evaluation. In order to evaluate these numerous COAs, which may achieve the same desired effects by substantially different methods, metrics must be found to adequately quantify their relative merits.   Desired effects may be achieved though disparate COAs, such as propaganda campaigns versus major interdictions. The Course of Action Simulation Analysis (CASA) task was created to research metrics identification, data representation and scoring approaches. This paper introduces concepts behind CASA and then chronicles task results to date, finishing with a discussion of the scoring methodologies and capabilities developed during the CASA prototyping effort. Specific areas discussed include: mission level simulations usage to examine multiple-hypothesis solutions; ontologies and XML metadata representations; COA metrics identification; development of tools for data reduction, comparison and visualization; and scoring approaches. Finally, we discuss lessons learned to date.