

Assessment of Situational Awareness and Collaboration in Exercise Environments

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Abstract:

The U.S. Defense Advanced Research Projects Agency's (DARPA) Command Post of the Future program seeks to provide the commander information about the battlespace in a form that will enhance his cognitive processes, decrease the uncertainties, unknowns, and the fragmented pictures of the battlefield, while enhancing the Commander's ability to make decisions and direct their execution in an environment of great uncertainty.

CPOF exercises known as "block parties" are an integral part of the CPOF program. Block parties incorporate elements of both demonstrations and experiments. They are small-scale, generally last 2-3 days, and occur in a war game format. CPOF technologies are utilized by a human in the loop, typically a blue force commander together with 2-3 subordinate commanders. The blue force is pitted against a red force with a single commander. All commanders are subject matter experts who are usually retired or active duty military officers of appropriate rank for the positions played.

For all Command Post of the Future block parties, analysis seeks to identify areas where current CPOF technologies helped, where they made no difference, and where any potential CPOF technology would have helped. The focus of this study was the fifth such block party. For this block party, collaboration between command cells and between command and support cells was the major element of interest.

It is difficult, and at times seemingly impossible, to apply useful or relevant command and control metrics to non-experimental events. Block party-type events lack controls, and in addition are often restrictive to data gathering efforts. Yet they can provide rich environments in which to explore dynamic interactions and to reveal insights and suggest hypotheses for future testing through experimentation. The purpose of this study was to determine what could be learned by employing traditional C2 analysis tailored to a collaborative block party.

The block party provided for a brigade-sized blue force with a commander and three subordinates, along with a supporting situational awareness officer. Metrics used to assess collaboration in the exercise were heavily grounded in individual and shared situational awareness among the cells. Data was gathered via audio and video capture of the brigade commander's cell, subordinates cells, the situational awareness officer's cell, and the control cell.