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**Assessing the Operational Impact of New Network Centric Technology,
Collaborative Replanning with User Defined Operational Picture: A
Controlled Experiment with Warfighters**

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Topics (1) Net-Centric Experimentation & Applications; (2) Metrics & Assessment; (3)
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Abstract

In adapting C2 to the 21st century we plan to conduct a controlled Human-In- The- Loop (HITL) experiment with new Network Centric Warfare (NCW) technology which will be introduced to a sixteen experienced warfighters in the form of a collaborative User Defined Operational Picture (UDOP) with SORTS Force Readiness data enabled by an IP wide area network as a possible improvement over their use of current baseline technology in the form of the GCCS with Common Operational Picture (COP) capability. We will examine here the general methodology of using controlled HITL experiments as a means of evolving more effective C2 technology for the warfighter.(See the Award-winning *TTCP GUIDEx*, Canadian Forces Experimentation Center, Ottawa, 1966)

In addition, we hypothesize that the results of this particular experiment will show significant improvements on the NCW performance metrics of Situational Awareness, Shared Situational Awareness and bottom-line Combat Effectiveness, across several phases of the warfighting scenario played out by the joint warfighting teams due to use of the new NECC(Net-Enabled Command Capability) technology employed in the experiment trials. The important role of enhanced operational replanning quality, and speed, enabled by the new technology, will be carefully examined here, since recent experimentation results strongly suggest them as NCW metrics that warrant more scrutiny by the research community.(See P. J. Hiniker & E. E. Entin, “ Assessing the Operational Impact of Network Centric Technology, Collaborative User Defined Operational Picture: A Controlled Experiment with Warfighters, *Proceedings of 11th ICCRTS*, Cambridge, UK, Sept. 2006) Thus we expect that collaboration and synchronized replanning will play important roles in this C2 experiment. As in our prior published experiments, we intend to use a within- subjects design while employing multiple analysis of variance (MANOVA) in the statistical testing of our hypotheses. We intend to conduct the actual experiment trials during the spring of 2007.