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Title: Assessing human performance in a distributed virtual battle experiment

Topics: Track 4: Cognitive and social issues
Track 7: Network-centric experimentation and application
Track 6: Metrics and assessment

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ABSTRACT

Human performance and decision making in distributed teams was examined in a multi-national virtual battle experiment conducted to investigate the impact of using an uninhabited aerial vehicle (UAV) to supply intelligence support to a maritime coalition defence force. In a synthetic simulated force defence operation, two allied frigates escorted neutral high-value vessels through dangerous littoral waters that contained the threat of a swarm attack by small, fast inshore craft. The allied ships were controlled by navy command teams geographically located in their respective countries and nations were networked together for interactive play and collaboration. Performance of the distributed teams was assessed in scenarios with and without the availability of a UAV. Objective measures included number of leakers and response time to detection of hostile craft, as well as within- and between-ship communication patterns. Subjective measures of individual and team workload, and situation and shared awareness of command team members were also collected. This study, using a synthetic environment coupled with live command teams in a netcentric operation, extends the findings of an operational research study in which command and control issues were identified as critical elements in the problem of force defence against swarm attack.