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Kelly Satterfield

Victor Finomore

Courtney Castle

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The Effects of a Net-Centric Communication Tool on Communication Monitoring and Threat Detection

Kelly Satterfield², Victor Finomore¹, & Courtney Castle²
Air Force Research Laboratory, Wright-Patterson AFB¹;
Oak Ridge Institute for Science and Education, Wright-Patterson AFB²;

Command and Control (C2) operators rely heavily on radio and chat communication as well as tactical displays to efficiently plan, direct, coordinate, and control assets. The integration of information for the C2 operator is critical for mission success. This environment, which is communication intensive, imposes a high degree of workload on operators thus resulting in failures of detection or comprehension of critical messages. Multi-Modal Communication (MMC) is a net-centric communication management suite with advanced tools to better equip the warfighter in managing their communication. This study examined performance associated with monitoring communication channels, while also monitoring a dynamic tactical visual display for potential threat of enemy fire. Operators monitored and responded to the occurrence of critical signals presented during the 12-min monitoring task. Performance was analyzed in regard to signal detection for both tasks while response accuracy and time were collected for the communication task. An overall detection score reflected a combined score of the number of critical messages and threats detected. Data showed that with the MMC tools operators detected more critical events in the communication and threat detection tasks as compared to a standard radio. Perceived mental workload as measured by the NASA-TLX was also rated as lower in the MMC than radio condition. MMC can be a beneficial communication tool in its ability to aid C2 operators in communication management while allowing for greater performance on the monitoring of their tactical display.