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SHARED SITUATION AWARENESS IN COMPLEX AEROSPACE ENVIRONMENTS WITH INCIDENTS OF COMMUNICATIONS TECHNOLOGY DISRUPTION

Abstract

NASA Mission teams are geographically dispersed such that communications technology is crucial for successful coordination. For optimal networking capabilities and effective resource allocation, a team has to acquire an accurate awareness of the current situation. Information access, in the form of shared situation awareness (SSA) between team members, has to be established. SSA is dependent upon the use of advanced technological communication devices (e.g., VoIP, whiteboards), and shared environments. However, SSA is restricted in dispersed teams, such as Mission flight controllers and in-flight Mission specialists. These individuals must rely on verbal communication and shared displays (Endsley et al., 2003). In complex space environments, which call for fast decision making, communication failures can have catastrophic outcomes if data exchange is lost for prolonged periods or if the situation is not constantly monitored. The objective of this research is the exploration of communications technology disruption in SSA dispersed team environments. In order to examine the objective, participants would be randomly assigned to one of two dispersed teams. To provide each participant with dynamic simulation conditions and clear team tasks, teams would complete scenarios in a microworld environment. Each participant would be immersed in situations with advanced communications technology availability interspersed with periodic disruptions. Assessment of SSA along with workload, performance, and behavioral analysis would be conducted. This study might help to develop support for accurate course of actions and strategic goals by enhancing communications technology and by developing procedural support aspects to maintain relevant SSA levels in complex aerospace environments.