

## **The Use of Simulation to Support Tactical Augmented Reality Requirement Development**

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**Abstract:** The Army is developing technology to provide soldiers with enhanced situational awareness. One such technology, the Augmented Reality for Radio Frequency Visualization System (ARFVIS) provides soldiers with the ability to localize a radio signal and display its location on a heads-up display. Constructive simulations were developed on the Infantry Warrior Simulation software, an agent-based modeling package, to perform trade-space analysis on the technology and to identify the necessary capabilities. These simulations indicated that the ARFVIS system increases situational awareness resulting in an increase in soldier lethality and survivability. The results from these models support a set of experiments that places test subjects in a virtual environment with ARFVIS capabilities. The constructive simulations provided insight into the design of these experiments including identifying the test outputs and operational setting. The outputs from the experiments will feed back into the simulation to provide a more refined model.

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