

## Using a Surrogate System to Refresh Virtual Simulation Technology

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### ABSTRACT

The Aviation Combined Arms Tactical Trainer (AVCATT) is the U.S. Army's Program of Record for rotary-wing, virtual collective training. AVCATT is a multi-station virtual simulation device designed to support collective and combined arms aviation training for U.S. Army rotary-wing aircraft crews. As a virtual simulation, the primary interface with the trainee population is the simulator's visual system. The AVCATT's visual system has many demanding and computationally intensive requirements; it must accurately render real-time Out the Window (OTW), Night Vision Goggle (NVG) and multiple sensor views to the crew. Technology refreshment of the visual system is of immediate and paramount importance to this program. However, due to high simulator utilization, access to the fielded visual system for analysis is challenging.

In this paper, we discuss our creation and implementation of a surrogate visual system of the AVCATT in order to conduct a robust scientific analysis of potential new visual technology for the fielded AVCATT. We discuss our examination of potential visual alternatives against seven key metrics we identified. We also discuss our preliminary experimental results that may potentially improve the AVCATT's visual fidelity and user experience while reducing the program's lifecycle costs.

### BIO

**Mr. Kevin Kaighn** is currently a Technology Leader at SRI International. He received his M.S. in Electrical Engineering from Columbia University in 1992. He has over 20 years' experience in hardware architecture and has been the SRI technical lead on numerous vision-related programs.