

## SETP Annual Convention

### ABSTRACT

#### **Closing the Degraded Visibility Environment Operations Gap While Solving the CFIT, Brownout/Whiteout, and Wire strike Accident chain.**

Aviation commanders coming out of Iraq and Afghanistan have recently detailed the negative affect that Degraded Visual Environments (DVE) has on supporting ongoing operations. The enemy knows the weather minimum for aviation operations as well as our aviators. The DVEs include natural conditions such as dust storms, fog, snow , but also includes man made DVE such as brownout and whiteout. Similarly the US military has had an operational and survivability advantage over our enemies by owning the night, a form of DVE. Today our enemies have closed that gap and we must now fight to own the night. The US Army Aviation Center of Excellence has recognized this operational gap. When coupled with the fact that 80% of all helicopter losses during operations in Iraq and Afghanistan are due to brownout and wire strikes not hostile action, The US Army is moving forward with Sierra Nevada Corporation Helicopter Autonomous Landing System (HALS) to close the DVE gap.

To fill this operational and safety gap, the Army PM Utility Program Office through the Army Applied Technology Directorate has been developing the SNC HALS. HALS is a 94GHz helicopter radar system that provides real time 3 dimensional radar imagery of terrain and obstacles fused with DTED, satellite imagery and advanced symbology to enable the aircrews to safely operate the aircraft while in severe Degraded Visual Environments. While filling the operational gap, HALS will significantly reduce the risk in combat and non-combat operations of the leading causes for helicopter accidents in theater: brownout, wire/obstacle strikes and CFIT. This same technology is being transferred into the fixed wing community to enable safe takeoff, taxi and landing operations in DVE with no ground component.

The paper will present the details of this unique and emerging imaging technology, factors affecting crew station integration, technical data, flight test lessons learned to include necessary efficiencies required to conduct testing in a funding limited environment and video from ongoing flight test.

Mr. Todd Dellert (Applying for Membership), DAC, Army Applied Technology Directorate

Mr Jack Cross, Chief Engineer, Enhanced Vision Systems, Sierra Nevada Corporation

Mr. Pat Garman (AF), VP Programs, Sierra Nevada Corporation