

# AN008. ILS Zone 3 Measurement

## PROJECT AT-A-GLANCE

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## RELEVANCE TO TECHNICAL TRAINING AND HUMAN PERFORMANCE

- Detailed understanding and visualization of spatial variation of ILS signals will augment manned flight inspection and enhance station calibration. Rapid measurement capability will permit identification and correction of signal anomalies and enhance safety.

## STATEMENT OF WORK

- A UAS-borne platform is being developed in coordination with the University of Oklahoma to permit rapid, low-cost measurement and visualization of in-situ instrument landing system (ILS) signals.
- Low-cost software-defined radio (SDR) developed by the University of Oklahoma is being integrated to rotary-wing UAS.
- A visualization package for the measured ILS-signal difference-in-depth-of-modulation (DDM) is being developed.

ILS-Measurement UAS In Flight



## STATUS

- Initial test flights with integrated SDR/UAS system have been conducted and in situ ILS signal DDM have been measured.
  - Stronger than expected electromagnetic interference (EMI) from the UAS communication system and motors has been identified.
  - Propeller-induced Doppler spreading
- Preliminary signal visualization package has been implemented.

## FUTURE WORK

- Mitigation of EMI and/or Doppler spreading effects
- Refinement of the visualization package
- Development of dedicated UAS platform.