A UAS-ATC Simulation Test-Bed

PI: Steven Shope, Ph.D. **Sandia Research Corporation, Mesa AZ**

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Identification and Significance of Problem

UAS is the fastest growing segment of the aviation industry

Integration into the NAS is underway

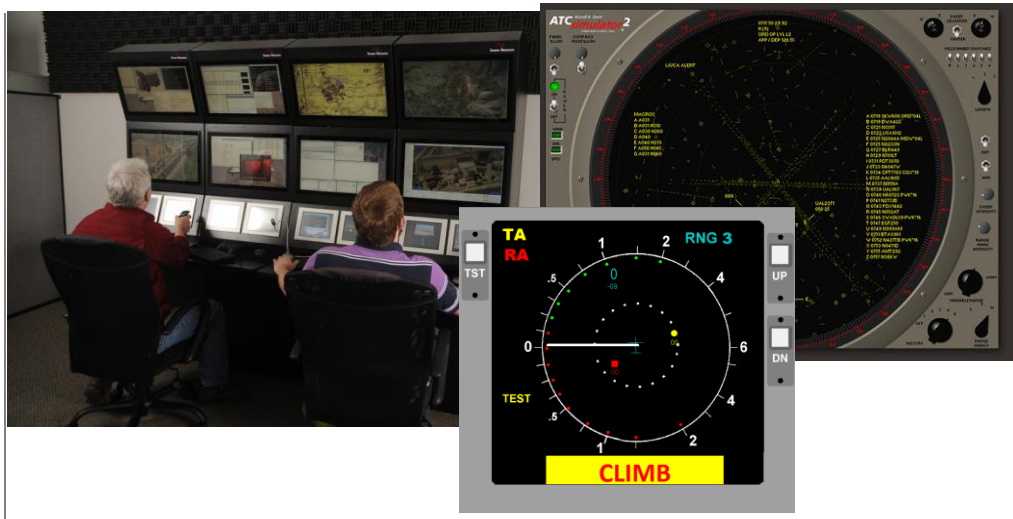
Traffic avoidance and other safety issues are of great concern

Technology alone can't solve these problems

Human system integration along with human performance and situational awareness are critical components of this problem

UAS-NAS simulation systems can aide this research

Embedded metrics are essential



Phase I Technical Accomplishments

- Focus group meetings with Air Traffic Control personnel
- Successful interconnection with the ASU ATC simulator
- Evaluation of an alternate ATC sim system (ATCSimulator)
- Design and software development of a TCAS-like ground control station display.
- Design, initial implementation, and testing of nine unique UAS-NAS scenarios
- A target set was developed for the desert in southern Arizona
- Designed a performance metric
- Designed a situational awareness metric

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NASA and Non-NASA Applications

- UAS-NAS test bed (NASA and others)
  - Defining NAS procedures
  - UAS operator training guideline
  - Determine essential competencies and skills
  - Recurrence training
- Human performance assessment (NASA and others)
- Training assessment (NASA and others)
- Embedded metrics – R&D and actual system (others)
- Real time performance assessment (others)

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