



U.S. ARMY  
**RDECOM**

Advanced Electromagnetic Measurements



## S&T Campaign: Assessment & Analysis *Assessing Mission Capability of Systems*

Christos Maragoudakis, (575) 678-3145  
christos.e.maragoudakis.civ@mail.mil

### Research Objective

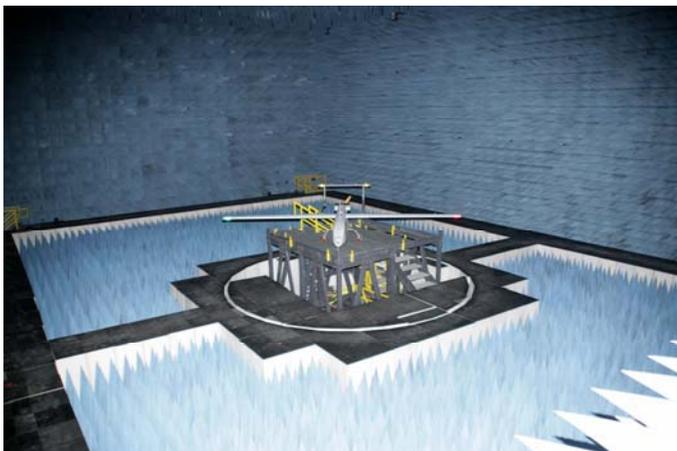
- To improve RF measurement methodology
- Research will increase accuracy and reduce time requirements of electromagnetic measurements through post-processing and innovative measurement



Inter-system electromagnetic interference testing

### Challenges

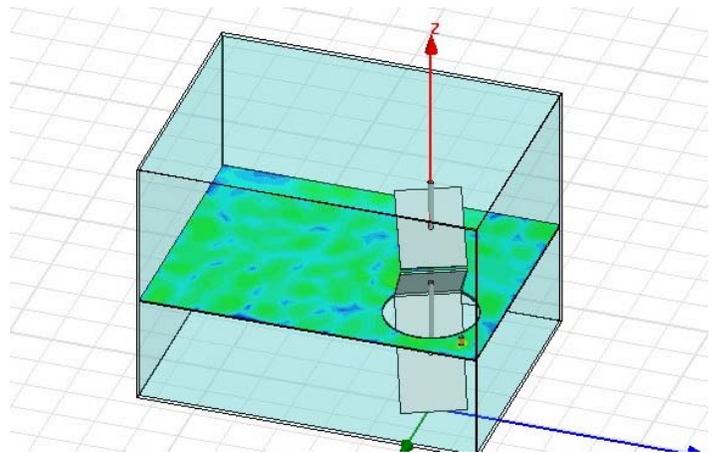
- Characterization of subtle electromagnetic effects that are often masked by greater electromagnetic environments with larger amplitudes
- Reduce time needed to fully measure electromagnetic fields (i.e. 360 degrees azimuth, 90 degree elevation), over large bandwidths (i.e. wide-band systems)



UAV to ground communication testing

### ARL Facilities and Capabilities Available to Support Collaborative Research

- Two Anechoic chambers (110 ft X 70 ft X 40 ft and 40 ft X 20 ft X 20 ft)
- Reverberation chamber
- Transverse Electromagnetic (TEM) Cell
- Electromagnetic environment (EME) Generation
- High Frequency Structure Simulator (HFSS) software



Simulation of the reverberation chamber

### Complementary Expertise/ Facilities/ Capabilities Sought in Collaboration

- Electromagnetic simulations
- Automation of data collection and data reduction
- Use of advanced data processing such as compressive sensing, near-field to far-field transforms, phase center analysis, stochastic reverberation chamber analysis, TEM cell data analysis, etc.