



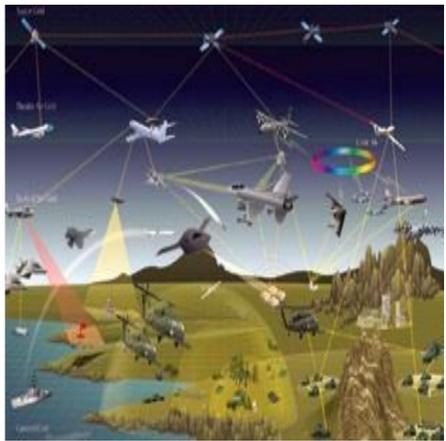
**S&T Campaign: Analysis & Assessment**  
**Assessing Mission Capability of Systems**

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**Research Objective**

- Improve radio communication performance using:
  - Electronic warfare (EW) mitigation
  - Modeling and simulation
  - Digital signal processing
  - Radio frequency (RF) Laboratory investigations



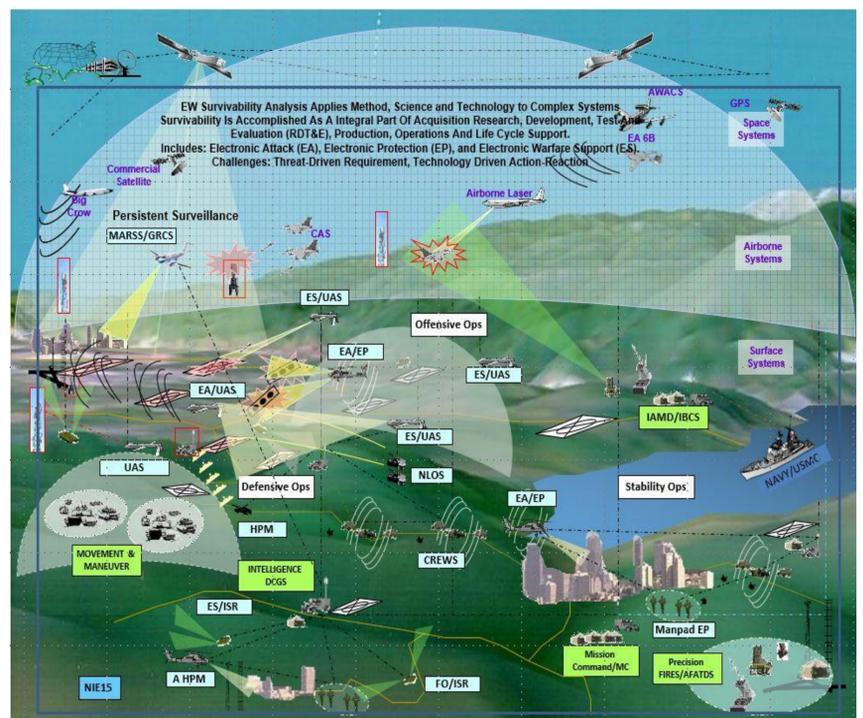
RF Battlefield Environment

**Challenges**

- New radio communication techniques allowing unencumbered communication in the congested and contested electromagnetic spectrum
- Conduct EW and RF analysis earlier in the development cycle

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

- Extensive RF laboratory equipment/facilities
- Sage – RF communication propagation analysis tool
- Subject Matter Expertise:
  - RF communication
  - Modulation techniques
  - Networking

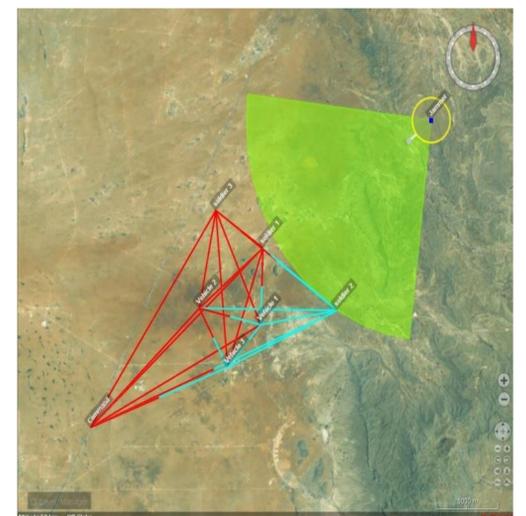
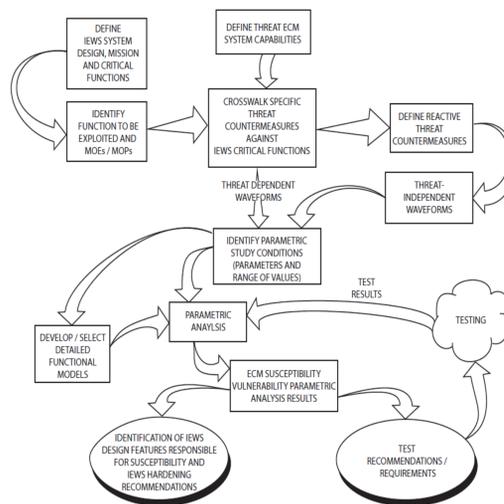


**SLAD investigation, simulation, assessment, experiment & analysis / EMVAF to conduct sensitive tests avoid open air**



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

- Knowledge of potential new/novel RF communication techniques
- Communications Electronic Warfare Instrumentation System (CEWIS)
- Expansion of current EW laboratory investigation methods
- Knowledge of new/novel modeling techniques for open-air RF propagation



**Experience & expertise create validated EW threats.**

**SAGE – RF Communication Propagation Model**