



BUILDING RESILIENT MISSION CAPABILITY

MITRE's RCAT provides a collaborative cyber and avionics testbed for innovative system and platform research shared across government agencies, industry, and academia, while expanding expertise and capabilities throughout the entire aerospace ecosystem.

A Consolidated Environment to Reduce Cyber Risk and Lower Integration Cost

Providing integrated, flight-qualified avionics and software to support platform assessment and qualification in an operationally realistic environment for improved mission assurance, MITRE's RCAT provides the U.S. Air Force and other customers with a hands-on demonstration, experimentation, development, and test facility at the Bedford, Mass., campus. Today, the RCAT supports communications, navigation, surveillance, ground support systems, and data bus modernization efforts to help reduce the attack surface of commercial and military avionics and improve platform/system resiliency and mission assurance.

The RCAT offers users access to a broad spectrum of commercial and military avionics and flight control software—affording users the opportunity to explore, model, and mitigate the impact of cyber attacks on multiple platforms and missions.

The RCAT's simulation and integration capabilities enable full evaluation of emerging threats that allows for the exploration of materiel and non-material (operational) mitigation solutions, lowers cost, and accelerates delivery of capability to the field. In addition, the RCAT supports air traffic management modernization of Air Force platforms to facilitate seamless access to civil airspace.

RCAT Capabilities and Resources

The RCAT provides a collaborative cyber/avionics testbed for innovative platform research shared across the DoD, other government agencies, industry, and academia, while expanding our expertise and capabilities to the entire aerospace ecosystem. RCAT capabilities include:

Avionics Systems

- Suite of flight qualified military and commercial avionics, including radio, transponder, autopilot, and SATNAV systems
- Reconfigurable avionics test-bench for voice/data communications
- Military and civil navigation and surveillance systems for aerospace cyber research
- ACARS data network environment for end-to-end Air Traffic Control (ATC) and Air Operations Center communication, and cockpit ATC emulation
- Qualified Flight Management System software for high-fidelity avionics simulation
- MIL-STD-1553, ARINC 429, IEEE 1394, and CAN data bus emulators
- Automated cyber test capabilities via MITRE developed Pandora's Box system

Cockpit Simulators

- Tanker/Airlift "glass" cockpit
- Two reconfigurable fighter (single pilot) cockpits
- Cockpit integration for "live fly" demonstrations and experiments

For more information about MITRE's RCAT laboratory expertise and capabilities, contact Thomas Scaplen, tscaplen@mitre.org, and Jacob Downs, jmdowns@mitre.org.



MITRE's RCAT provides the U.S. Air Force and other customers with a hands-on demonstration, experimentation, development, and test facility at the Bedford, Mass., campus.

MITRE's mission-driven teams are dedicated to solving problems for a safer world. Through our public-private partnerships and federally funded R&D centers, we work across government and in partnership with industry to tackle challenges to the safety, stability, and well-being of our nation.

MITRE | SOLVING PROBLEMS
FOR A SAFER WORLD®