



# Global Technology Connection

ARADISS: Adaptive Real-Time Anomaly Detection & Identification for Sensored Systems  
SBIR: 80NSSC22CA144

## What is ARADISS?

**ARADISS** is a rapidly deployable, light-weight anomaly-detection and root cause identification technology using machine learning. This technique is applicable to all battery-powered or battery-supplemented systems such as UAVs and satellites. This reusable framework is agnostic of platform, mission, or failure mechanism, and is highly adaptable, significantly reducing development and deployment times.

The algorithms are self-adapting to gradual system changes allowing for highly sensitive and accurate diagnostics. ARADISS can be implemented either on-board or off-board a system and allows for rapid implementation of mitigation strategies, increasing autonomous capabilities and mission effectiveness.

### Capabilities:

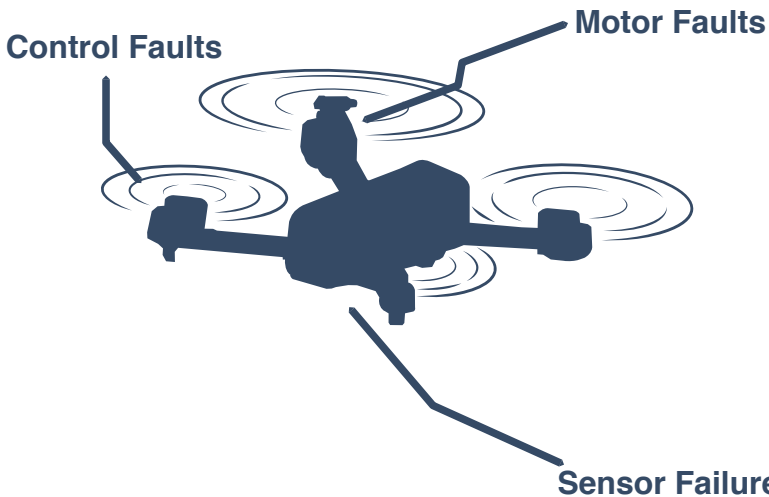
- Detect system anomalies such as:
  - Sensor and component faults
  - Software bugs and cyber threats
  - Environmental disturbance
- Information and data assurance
- Root Cause Identification

### Applications:

- Space systems - satellites and robotic systems
- Unmanned aerial, ground, and underwater vehicles
- Other cyber-physical systems such as automobiles

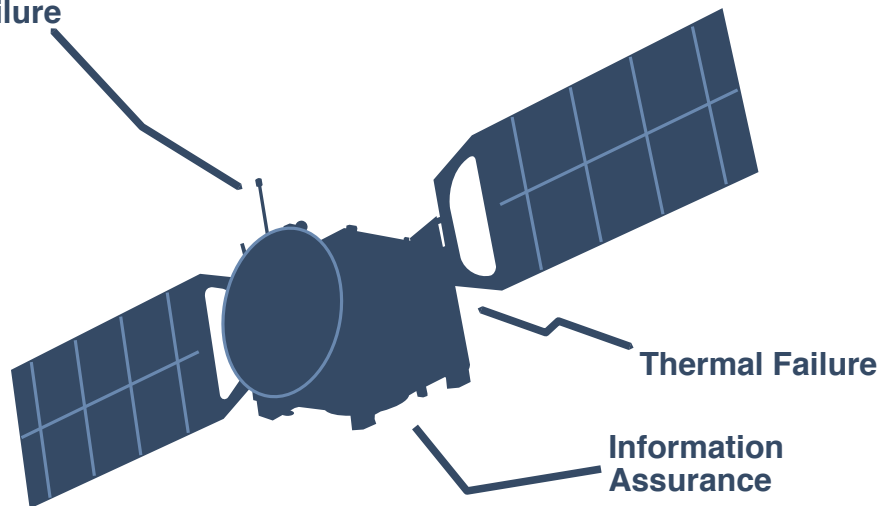
### Benefits:

- Cheaper, faster, and transparent fault management
- Comprehensive and robust fault coverage
- Rapid and automated adaptation to new platforms
- Low computational overhead
- On-board or off-board deployment
- Increased autonomy and mission quality
- Second-line-of-defense for risk-averse missions



Unique and complex systems such as UAVs and satellites with many components and sensors make ARADISS an optimal solution for cost-effective fault management.

ARADISS can also operate as a second line of defense for highly risk-averse applications, such as drone operations in densely populated areas or mission-critical satellites.



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