## BASIC INFORMATION

<table>
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<th>Project Classification:</th>
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<td>Sponsoring CANEUS Work</td>
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<td>Program Board:</td>
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<td>Tracking Number:</td>
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<td>POC Email:</td>
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## PROJECT DESCRIPTION

### Problem Statement:
Elimination of wiring harnesses for sensors used in:
- Structural health monitoring - exploration vehicles
- Diagnosis of airframe aging and damage
- Distributed wireless sensor monitoring (T, P, etc.)

Ability to utilize existing flight qualified sensors wirelessly with qualification of a single interface.

### Approach/Solution:
SAW sensor-RFID tag devices:
- Passive wireless link to external sensors
- Work with a wide variety of sensors
- Unique device identification code
- High data density (> 32 bits)
- Link to AE sensors - structural health monitoring
- High processing gain and S/N
- Range 10x that of conventional SAW RFID tags

### Required Technologies/Facilities:
- ASR&D SAW tag and electronics prototyping
- Need: Antenna development
- Application engineering/system integration

### Affected Applications:
- End users interested in eliminating wiring
- Application engineering

## BACKGROUND

### Milestone TRL Risk Measure of Success TRL Date

### Deliverables:
- Current Phase I NASA SBIR program:
  - Demonstrate sensor-RFID tag technical feasibility
  - Analyze external sensors
  - Evaluate impedance transformation techniques
  - Design, fabricate and test SAW sensor-RFID tags
  - Demonstrate wired and wireless operation
  - Evaluate performance and range

- Follow-on work - TBD

### Outreach/Organizational Interfaces:

### Academic Contribution/Work Force Needs:

### Business Development and Regulatory Compliance:

## PROJECT EXECUTION

### ROM Cost

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### Team Members and Roles:

### Potential Funding Sources:

### Business Case:

### Business Impact: