

# NASA SBIR/STTR Technologies

## SR-CATS: A Short Range Clear Air Turbulence Sensor



Michigan Aerospace Corporation

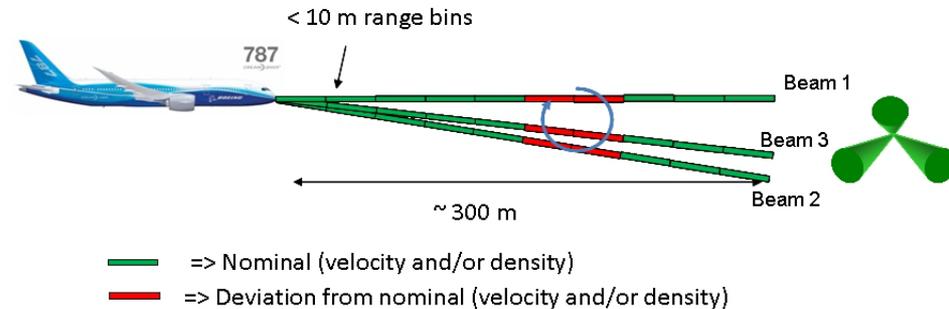
Ann Arbor, MI

Proposal No.: A2.07-9532

### Identification and Significance of Innovation:

- Range resolved LIDAR to detect deviations from velocity and density between 60 m and 300 m ahead of the aircraft
- Also provides air data solutions: air speed, angle of attack and side slip
- Compact instrumentation fully integrated into the airframe
- Builds on Michigan Aerospace's extensive experience on air data sensors

Estimated TRL (1 – 9) at beginning and end of contract: 3 & 4



### Technical Objectives:

1. Determine performance specifications
2. Model the performance of the proposed instrument using in-house models
3. Develop the design of the instrument and test plan to be implemented in Phase 2.

### Work Plan:

- Task 1: Requirements definition
- Task 2: Trade studies to determine the performance and configuration of the proposed sensor
- Task 3: Instrument design
- Task 4: Demonstration and recommendations for Phase 2

### NASA Applications:

This instrument will be an integral part of the NextGen instrumentation for the predictive control of gust load alleviation.

### Non-NASA Applications:

Gust load alleviation instrumentation will increase passenger and aircraft safety during commercial flights. Damage to the equipment caused by severe gusts will be alleviated, thus reducing maintenance costs to the airlines.

### Contacts:

Technical: Dr. Dominique Fourquette  
(734) 975-8777 x114; [dfourquette@michaero.com](mailto:dfourquette@michaero.com)  
Administrative: Dr. Robert Sampson, CEO  
(734) 975-8777 x115; [rsampson@michaero.com](mailto:rsampson@michaero.com)

**NON-PROPRIETARY DATA**