Form 442 File Number: 1033-EX-CN-2020

Exhibit: Research Project Information

Nature of Project

This project is research involved in the development of a fully electric VTOL aircraft. The portion which requires the use of this telemetry system is actual live flight testing of the aircraft. This small aircraft will fly with a crew of one, the pilot.

Necessity of Telemetry System

Safety of flight requires real-time monitoring of a large number of critical flight and system parameters, such as:

1) Temperatures, and rate of rise of temperatures, in each of the five high voltage battery packs. There are several hundred temperature monitoring points in each battery pack.
2) Temperatures, currents, voltages and torques in each of the electric propulsion units. These are high bandwidth signals.
3) Aircraft performance parameters to include stresses, control surface commands and responses, as well as airspeed, heading, altitude and attitude information.
4) All alarm and warning signals.
5) Video feed of cockpit.
6) Open bidirectional audio channel to pilot.

The real time aircraft signals are monitored in real time by a team of subsystem Subject Matter Experts. Loss of communication would likely result in a mission abort.

Showing Existing Facilities are Inadequate

Ground testing in close proximity to Mission Base has been accomplished with conventional WiFi as well as single channel VHF voice communications. This is barely adequate even at very close range and certainly inadequate for flight beyond the airport where the aircraft is based. A reliable, long range system is required to maintain a high level of flight safety to allow for longer range flight which is required for the aircraft test program.