

## DESCRIPTION OF EXPERIMENTATION

Sikorsky, A Lockheed Martin Company hereby seeks authority under Part 5 of the Commission's rules to permit to conduct testing at multiple locations, including in and around its own heliport at Stratford, CT. These operations are being conducted in connection with a DARPA contract (no. HR0011-17-9-0004).

Specifically, Sikorsky's Innovation Department is working with DARPA on reducing pilot workload in various aircraft. To allow Sikorsky Engineering to perform these tests we are utilizing the S76-OPV (SARA) aircraft, a fly-by-wire converted UH-60A aircraft.

Since this aircraft is experimental and flown under FAA R&D experimental flight tickets, we are required to monitor Flight Control parameters live in our ground control stations. We also monitor pilot tablets to verify operation of the Matrix Systems. These data require high bandwidth to support the telemetry, video, and mission functions. The link to the aircraft also requires bi-directional ethernet traffic to be exchanged with the Ground Control Station and test aircraft. This configuration allows Sikorsky to send log data to the ground station and send updated missions to the pilot's tablets.

To meet these requirements Sikorsky has been working with Troll Systems and Silvus Technologies to design ground tracking antennas and aircraft equipment to meet our operational range of 25-30 miles at an altitude of 3,000 ft for our helicopters. The fix wing operating at 8,000-10,000 ft and at a range up to 60 miles.

*Directional antenna information.*

If directional antenna, provide the following:

- (a) Width of beam in degrees at the half-power point: AZ - +/- 2 degrees, EL - +/-1.3 degrees
- (b) Orientation in horizontal plane: Radiation is both Vertically and Horizontally Polarized
- (c) Orientation in vertical plane: Radiation is both Vertically and Horizontally Polarized