Drone Based Tunable Direction Finding up to 6 GHz

With the future of drone delivery services, some control of drone traffic will be required in order to prevent mid-air collisions. This problem will not be handled by Air Traffic Control. Instead it will be handled in a manner equivalent to street intersection traffic lights in the sky.

These traffic lights could be radio signal direction finder payloads on traffic controlling drones. When a potential drone collision is anticipated, the traffic controlling drone will transmit "fly up – fly down" instructions to the two delivery drones.

This project focuses on the key technologies needed to assemble a drone mountable 360 degree azimuth DF front-end covering the frequencies from 1 GHz to 6 GHz.

The project focuses on the design of antenna elements, corporate feed circuits, low noise amplifiers, tunable down-converters, and signal processing to assemble the DF front-end.