The purpose of this experiment is to support development of a SDR-based UAV mounted UHF/microwave relay system for non-line of sight communications.

Experiment Description:

Each relay will support air to ground and air to air links. The air to air links may be chained in order to extend effective communication range under non-line of sight conditions. Up to four flying drones and four ground stations ay be employed to demonstrate data transmission through the linked relays. The communications links will use a store and forward method and frequency duplex transmissions.

The experiment is to be conducted within 300 meters of the Virginia Tech Drone Park at 2143 Oak Lane on the Virginia Tech campus. Flying drones will be located within the drone cage or the adjacent indoor flight range. Flying drones are limited to a maximum elevation of 85 feet by the drone cage ceiling. Ground stations will be located outside of (but within 300 meters of) the drone cage. Ground station antennas will be limited to an elevation of 5 meters. Transmissions by grounded drones may be located outside of the drone cage but within 300 meters.

Measures to avoid interference:

Transmitters will be operated at relatively low power in order to avoid interference with existing services. Experiments will be limited to daylight hours. The drone altitude will be limited to 85 feet. The experiment will be confined to a small area offset from the main campus and town.