



5905-5925 MHz Experiment Description

Introduction

Ciconia Ltd (Ciconia) has developed the C&CAS (Coordination & Collision Avoidance System), a unique decentralized solution designed to enhance airspace safety by preventing midair collisions between drones and crewed aircraft. C&CAS enables safe, dense aerial operations and supports mixed-fleet environments, integrating V2V radio, ADS-B Out, Remote ID, and sensor data for comprehensive situational awareness. The system constructs a real-time map of the skies, assesses collision risk, and provides evading steering commands to both pilots and autopilots. C&CAS is scalable for small drones, large airtankers, and helicopters, and has been successfully tested with the Israeli Air Force and at the Texas Public Safety Drone Expo, demonstrating zero false positives and negatives in real-world scenarios.

Ciconia Ltd has engaged with the San Bernardino County Fire Protection District (SBCFPD) to evaluate C&CAS via a demonstration. The objectives are to:

- Resolve midair conflicts and prevent collisions between crewed and uncrewed aircraft;
- Facilitate safe, efficient mixed-fleet operations in challenging environments; and
- Demonstrate C&CAS's operational benefits for emergency response and public safety.

Ciconia now seeks an Experimental Special Temporary Authority (STA) to operate one small UAV and two helicopters equipped with 5.9 GHz CV2X modules on each aircraft operating in the 5905 – 5925 MHz band. The 5.9 GHz C-V2X modules will be installed on each aircraft to evaluate low-latency, high-reliability airborne vehicle-to-vehicle (V2V) and vehicle-to-ground links that serve as the communications backbone for C&CAS. The aircraft will transmit at or below 23 dBm (0.2 W) EIRP within a flight envelope limited to 1000ft AGL. All operations will comply with applicable FAA regulations and established aviation safety procedures and will cease immediately upon any credible report of harmful interference.

Test Overview

This Experimental Special Temporary Authority (STA) covers operation in the 5905 – 5925 MHz band to study short-range airborne communications in support of SBCFPD's pilot program to evaluate C&CAS.

Test location

- Address: San Bernardino County Fire Camp 6 & 15
18697 Verdemont Ranch Rd
San Bernardino, CA 92407
- Altitude: ≤ 1000 ft AGL.
- Fleet size: Two helicopters and one small UAV

Communications under evaluation

Experimental payload link (5.9 GHz). Each aircraft carries a low-power Qualcomm C-V2X module operating peer-to-peer ("PC5") with 20 MHz bandwidth and an omnidirectional antenna. Radiated power is capped at 23 dBm EIRP. The link supports air-to-air cooperative awareness messages and air-to-ground telemetry for network-performance logging. No base-station infrastructure is required.

Transmitter Information

Testing will occur at the San Bernadino test site located at the address listed above. The demonstration is planned to take place within approximately 2–3 km radius of the primary test coordinates listed in the table below. The helicopters may operate within a radius of up to 10 km.



from the primary test coordinates. The UAV is expected to operate within a radius of up to 500 meters from the primary test coordinates. Transmitter parameters are defined in Table 1. The 5.9 GHz CV2X modules devices will use a 10 or 20 MHz transmission bandwidth.

Table 1 Transmitter Information

Transmitter Type	Frequency (MHz)	Power (dBm EIRP)	Power (W EIRP)	Power (W ERP)	Bandwidth (MHz)	Emissions Designator:
Airborne mobile	5905-5925	23	0.2	0.12	20	20M00W7W

Table 2 Location Information

County	Lat / log of Operational Center Point	Operational Area Description	Altitude
San Bernadino	N34°11'10" W117°24'06"	Up to 10 km radius	Up to 1000 feet max

Interference Coordination

Immediate requests to stop transmission should be emailed to moshe@ciconia.flights. Alternatively, a shutdown requested can be submitted through the Project's Lead who can be contacted at 858-776 2157 or ronen@ciconia.flights.