

STATEMENT ACCOMPANYING REQUEST TO MODIFY EXPERIMENTAL AUTHORIZATION WG2XVN OF AEROVIRONMENT, INC.

1. Introduction

By this application, AeroVironment, Inc. (AeroVironment or AV), requests that the Commission grant a modification to call sign WG2XVN to operate facilities within the 1670-1675 MHz band at Rolle Field, Yuma County, Arizona and at two sites within Ventura County, California. The proposed sites are detailed in the attached Form 442. In this statement, we explain the purpose of the modification and why this application is within the Commission's experimental authorization rules.

2. Purpose

The purpose of the experiments at these sites is to examine the use of small unmanned aircraft systems (SUAS) technologies in public safety and related responsibilities. At the Rolle Field site, the work will provide analysis and information to further the availability of SUAS technologies within this sector and will be operated only within a Federal Aviation Administration (FAA) Certificate of Authorization (COA). It will focus on public safety and related responsibilities.

As to the proposed sites in Ventura County, California, AeroVironment has a formal relationship with the Ventura County Sheriff's Office. The Ventura County Sheriff has received a COA from the FAA for purposes of training and experiments relating to SUAS technologies. The operations are limited and restricted to the described areas with the objective to evaluate use in search and rescue, fire service response and other public safety responsibilities.

3. Technology Use

The experiments embrace a model using a band segment that aligns with technology and equipment currently available. AeroVironment renews its commitment to operations respecting other users of the band and those in adjacent segments. The limited power levels proposed are part of this commitment. AeroVironment believes the compelling purpose of bringing these advanced services to the challenges noted serves the public interest. The 1670-1675 MHz channels provide SUAS control and video and telemetry transmission from the SUAS to the ground. Slots are dedicated for uplink data and a downlink.

4. Nature of Operations

Surface Based and Airborne Transmission

As noted in our original application, AeroVironment's communications module, Digital Data Link (DDL), will use the 1670-1675 MHz band segment for purposes of sending ground based command and control data to and from the SUAS and to transmit video and telemetry to the ground control station. The technology, capable of operating within 1625-2390 MHz, requires 4

MHz for full motion video and a 1 MHz channel for video at 15 frames per second. Emission Designators are 4M68G7W and 1M56G7W, respectively with a transmit power at 10W. Transmission control will be from the surface control station to the SUAS via a laptop or console. AeroVironment’s DDL system has been adopted by the US Army as the standard communications architecture for all small unmanned systems, including ground robots.

5. Stop Buzzer

Andy Thurling, Chief Test Pilot, will be available by telephone at 805.581.2198, extension 1892, Cell Phone 805.368.6351 and will act as a “stop buzzer” if any matters involving interference arise during the testing.

6. Transmitting Equipment

The transmitting equipment is unchanged. It is AeroVironment Transreceiver Model 50280, with 2 units at the Rolle Field and 2 units in Ventura County. It is not experimental.

7. Antenna

The Antenna details have not changed from the current authorization and are as follows:

Antenna	Gain (Nominal)	Polarization	Orientation in Vertical Plane	Oriental in Horizontal Plane
GCU Antenna ASY AeroVironment Stack Patch	9dbi*	Vertical	30	85
1670-1675 MHz Tailboom ASSY AeroVironment Dipole	2dbi	Vertical	78	360

*Major Side Lobe

- E-Plane
 - Gain: -2 dbi
- 120 deg
- H- Plane
 - Gain: -2 dbi
- 179 deg

8. Restrictions on Operations and Interference Protection

AeroVironment understands that experimental operations must not cause harmful interference to authorized facilities. Should any interference occur, AeroVironment will take immediate steps to resolve the interference, including, if necessary, discontinuing operations.

9. Waiver of Station Identification Requirements

AeroVironment requests a waiver of the station identification requirements stated in Section 5.115 of the Commission's rules.

10. Diagram

Diagrams of the proposed operations are provided in this Attachment.

Conclusion

AeroVironment appreciates very much the Commission's consideration of this modification application for an Experimental Authorization. Please call upon us if we can respond to any questions.

Operations Diagram



Small Unmanned Aircraft-

Video and Telemetry
1670-1675 MHz

Aircraft Command and Control Main and
1670-1675 MHz



PROPOSED AREAS OF OPERATIONS- VENTURA COUNTY, CA

