STATEMENT ACCOMPANYING REQUEST TO RENEW WI2XNF EXPERIMENTAL AUTHORIZATION BY AEROVIRONMENT, INC.

1. Introduction

By this application, AeroVironment, Inc. (AeroVironment), requests that the Commission renew experimental authority, WI2XNF to operate at frequency segment 2380-2385 MHz at its facilities in Simi Valley, Ventura County, California.

The experiments relate to conducting Acceptance Test Procedures (ATP) in the spectrum segment 2380-2380 MHz for small unmanned aircraft system (SUAS) technology uplink command and control and downlink video and telemetry transmissions. These tests relate to provisioning the technology relating to the Puma and Raven models for various allied nation governments for security and public safety purposes. Several missions will be tested to determine if requirements can be met, including aerial reconnaissance, surveillance, route clearance, mapping, and payload delivery. All export and related controls will be adhered to.

This frequency segment is focused on US allied partners. Many relate to Foreign Military Sales (FMS) through AeroVironment's Department of Defense Natick contract # W911QY-18-D-0192. Nations scheduled to participate in the tests include the United Kingdom, France, Belgium, Latvia and Uzbekistan,

This application includes coordination with the Aerospace & Flight Test Radio Coordinating Council (AFTRCC), which is attached. AeroVironment will adhere to the conditions or notations AFTRCC presents.

In this statement, we explain the purpose and nature of the operations and why this application is within the Commission's experimental authorization rules. We provide the information required by the Commission's rules.

2. Purpose

The purpose of the experiments is to provide analysis and information relating to the provision of small unmanned aircraft system (SUAS) technologies. In particular, the SUAS technology is tested for performance metrics in the 2380-2385 MHz spectrum segment, which is not one of the frequency bands where there has been long term operational experience. The tests serve to continue the evolution of SUAS technology in the 2380-2385 segment. The experimental work provides insight as to necessary adjustments and make possible advances in the SUAS technology.

3. Technology Use

AeroVironment's SUAS technology provides real-time direct situational awareness. The system's communications platform features air vehicles, a ground control unit and support equipment. The AV can be controlled manually or can autonomously navigate a preplanned route. The experiments embrace a model using a spectrum segment available to and authorized for the user.

AeroVironment commits to operations respecting other users of the band and those in adjacent segments. The limited power levels proposed and the short term intermittent use are part of this commitment.

The frequency located at 2380-2385 MHz MHz will be for purposes of SUAS control and video and telemetry transmission from the SUAS to the ground.

The proposed locations are within a Certificate of Authorization (COA) of the Federal Aviation Administration at AeroVironment's facilities in Simi Valley, California. Access to the locations is controlled and limited. Operations will be within 12 km of the center point, not to exceed 152 meters AGL. Not more than one SUAS will be airborne at any one time.

4. Purpose and Nature of Operation

Airborne Transmission

The segments 2380-2385 MHz MHz will send command and control data from the SUAS and transmit NTSC video and telemetry to the ground control station with modulation SO-QPSK. Emission Designators 4M68G7W and 1M56G7W, with a transmit power of 10 w, are proposed. Transmission control will be from the ground control station to the SUAS via a laptop, tablet or consul.

5. Stop Buzzer

Bart Decker, Director, Flight Standards, AeroVironment will be available by telephone or electronic mail at 805 391-1335 and Decker@AVINC.com, respectively and will act as a "stop buzzer" if any matters involving interference arise during the testing.

6. Transmitting Equipment

Manufacturer	Model	Quantity	Experimental
AeroVironment	50280	2	No

7. Antenna

The following details Antenna information:

Antenna Frequency Segment	Gain (Main Beam)	Polarization	Orientation in Vertical Plane	Orientation in Horizontal Plane
GCU Antenna ASSY AeroVironment Stack Patch	9 dbi*	Vertical	30 deg	85 deg

*1st Major Side Lobe

E-Plane

- Gain: -2 dBi
- Degrees: 120 deg

H-Plane

- Gain: -2 dbi
- Degrees: 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

A diagram of the proposed operations and contour follows.

Conclusion

AeroVironment appreciates very much the Commission's, NTIA's, the Department of the Defense's, AFTRCC's and other agencies' consideration and the cooperation of other concurring agencies in reviewing this Experimental Authorization application. Please call upon us if we can respond to any questions.

Operations Diagram- RAVEN

Small Unmanned Aircraft- RAVEN

Courtesy of AeroVironment Inc

Command and Control Data Video and Telemetry 2380-2385 MHz

RAVEN

Small Unmanned Aircraft
Raven

Command and Control Data Video and Telemetry 2380-2385 MHz

PUMA