PURPOSE OF EXPERIMENTS

AeroVironment, Inc. (AV) designs and manufactures unmanned aircraft systems ("UAS"). The experimental operations associated with this application are for testing UAS command and control, telemetry and payload systems integrated with the Silvus Technology transmitter-receiver. The experiments will examine operational capability within the 2 GHz spectrum segments addressing uplink command control and downlink video and telemetry transmissions. While this work is directed to supporting US military services, there is no federal government contract associated with the tests.

Use of Varied Emission Designators

Several emission designators across varied bandwidths will be engaged to examine how U.S. military program requirements can achieve a minimum specific km link range while transmitting at particular Mbit/s downlink and whether video of sufficient quality to facilitate identification of ground locations can be met. The environment encompasses long standoff slant ranges while maneuvering the UAS and maintaining adequate link margin to cover multipath and fading.

Request for Authority to Access Center Frequencies to Test Emission Designator 20M0D1D

To carry out the purpose of the testing summarized above, AV requests authorization to access the following frequencies that will serve as a center frequency at both ground and airborne locations:

1845 MHz, 2222 MHz, 2227 MHz, 2257 MHz, 2262 MHz, 2287 MHz 2387 MHz, 2437 MHz, 2445 MHz, and 2448 MHz.

Specific to the Silvus Technology trans receiver, the test will engage the following Emission Designators:4M06D1D, 8M91D1D, 10M0D1D, 17M8D1D and 20M0D1D.

Purpose and Nature of Operations

The proposed channels will be engaged to send command and control data from the UAS and transmit NTSC video and telemetry to the ground control station. Separate radio transceivers will be tested:

- Silvus Technologies' SC 42A0-235
- Silvus Technologies' SC44K0-235

Transmission control will be from a ground control station via a laptop, tablet or consul. M

Site Location

Mobile ground operations will be located at N 36° 20' 21" W 94° 35' 32" in Cherokee City, Benton County, Arkansas near Highway 43. Airborne UAS line of sight flight operations will be centered at the same location. Flights will not exceed 121.9 m AGL. Operations will be within 5 km of the center-point. Testing will be performed at intermittent intervals for several hours.

Transmitting and Receiver Equipment

Manufacturer	Model	Quantity	Experimental
Silvus Technologies	SC42A0-235	2	Yes
Silvus Technologies	SC44K0-235	2	Yes

Antenna

A separate attachment addresses each antenna.

Adherence to Commission Rules Precluding Marketing of Test Equipment and Devices

AV understands and adheres to the Commission's rules precluding any permanent operation of equipment and devices, or the marketing or offered for sale of such until the necessary equipment authorization has been obtained.

Restrictions on Operations and Interference Protection

AV understands that experimental operations must not cause harmful interference to authorized facilities. AV commits to operations respecting other users of the bands and those in adjacent segments. Should any interference occur, AeroVironment will take immediate steps to resolve the interference, including, discontinuing operations.

Waiver of Station Identification Requirements

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

Stop Buzzer

Bart Decker, AV's Director of Flight Standards, is 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.

Diagram and Area of Operations

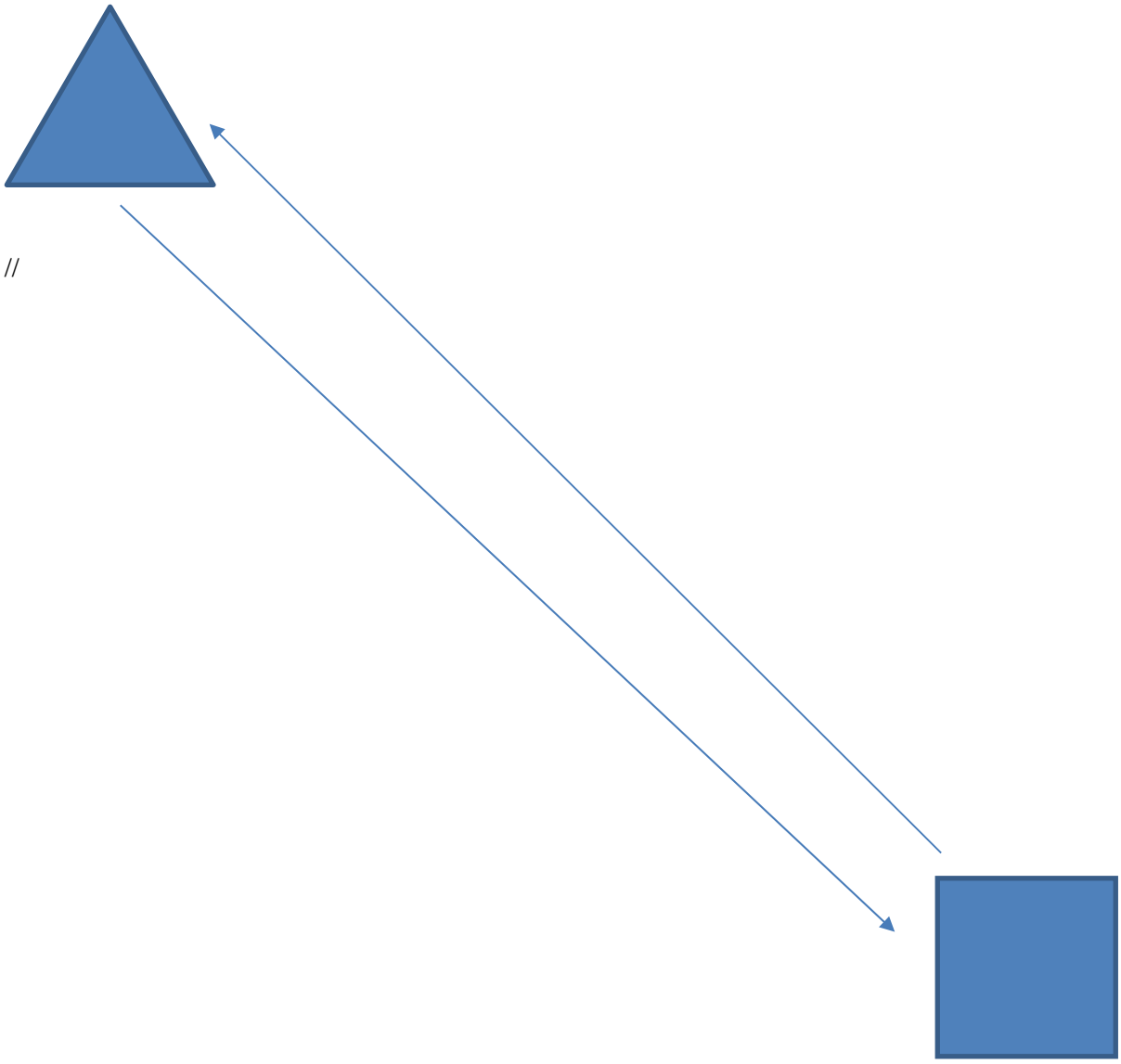
A diagram of the proposed operations a photo of the UAS in flight and site follows.

Conclusion

AeroVironment values the review and consideration of the Commission, NTIA, Department of Defense and other reviewing agencies. Please call upon us with any questions.

Line Diagram

Aircraft Transmit-Receive



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2222 MHz
2227.MHz
2257.MHz
2262. MHz
2287 MHz
2372.MHz
2437.MHz
2445 MHz
2448 MHz

Ground Control Station
Transmit-Receive

Operations Photo

In Flight

SITE LOCATION

North 36 20’ 21.4 West 94° 35’ 32”
Near Highway 43, Cherokee City, Benton County, Arkansas