

Raytheon Missile Systems  
Experimental Renewal Application  
File Number: 0342-EX-RR-2015

### **Exhibit 1: Explanation of Experiment**

#### **Overview:**

Raytheon Missile Systems (Raytheon) designs and builds missiles and other advanced technology products that it sells to the US Department of Defense and other agencies of the federal government. Raytheon is working on independent research and development of various unmanned aerial system platforms which require it to test various radio systems that will be incorporated into the UASs when those systems are deployed by the federal government customers.

Raytheon is filing this experimental license renewal application to continue testing of its UAS systems.

#### **Synopsis:**

- Spectrum needed: 1370-1390 MHz
- Signal level: maximum power is 0.1 watt output power and 0.1 watt ERP
- Location: Raytheon facility in Tucson
- Time of Use: only occasionally during the weekday

#### **Nature of the Experimentation:**

This application proposes to continue experimentation that requires Raytheon to operate UASs that incorporate 1370-1390 MHz transmitters aboard for testing in the development of products for federal government customers.

#### **Locations for the testing:**

The testing will be conducted in a 0.5 km radius around the Raytheon facility located at 3292 E. Hemisphere Loop, Tucson, AZ.

#### **Frequencies to be used, duty cycle, pulse width, and pulse repetition:**

The frequencies to be used will be a 300 kHz block within the 1370-1390 MHz band, using a center frequency and spectrum 150 kHz up and down from that center. This allows for a 20 decibel drop in the radio signal from the center frequency to ensure non-interference.

Time of Use: The program will use frequencies only sporadically, testing for limited amounts of time during the workday, evaluating the test results, and then testing again. There could be days at a time when the spectrum is not in use at all. Raytheon is willing to work with the FAA and DOD to schedule testing, if that is required to deconflict use.

**Power Level:**

The 0.1 W output power and ERP is required to ensure adequate reception of the signal.

**Stop Buzzer Point of Contact:**

Raytheon's Stop Buzzer point of contact is:

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**Conclusion:**

Raytheon is seeking an experimental license to continue testing to work on advancements to its UAS technologies.

Raytheon's work will advance the performance of the UASs, incorporating into those platforms the radio technology that is required when the UASs will be used by the federal government customers. The time of use will be limited. The proposed power levels are as low as possible to achieve the goals of the system.

If there are any questions about this application or if any additional information is needed, please contact Thomas J. Fagan, see above, or Anne L. Cortez, Washington Federal Strategies, 520-360-0925 or [alc@conspecinternational.com](mailto:alc@conspecinternational.com).