

Raytheon Missile Systems  
Experimental STA Application  
File Number: 0402-EX-ST-2019

### **Explanation of Experiment and Need for STA**

Raytheon Missile Systems is a defense contractor that builds UAVs and missile systems for the federal government. Those systems incorporate embedded radio systems that are essential to the performance and tracking of Raytheon's products. This application seeks authorization for use of a telemetry system that is being developed by Raytheon for use in its products.

### **Need for an STA**

Raytheon is seeking an STA for use of this telemetry system because it has been asked to explore the system as part of its next generation of telemetry in its products. Raytheon has a customer demonstration scheduled for the summer, and this testing is needed in advance to be prepared for that demonstration.

### **Technical Synopsis**

- Power level: only 10 W
- Area of operations: limited to area near plant
- Time of use: 1-2 hours daily of RF use, perhaps less, flights weekdays only
- Directional transmissions: transmit antenna will be aimed at RMS plant during transmissions

### **Description of Operations**

Raytheon will be testing the telemetry system prior to takeoff and then during captive carry flights of the systems where it is embedded.

### **Time of Use**

The telemetry transmitters will be in use only for 1-2 hours daily, when it is possible to schedule a flight. It is likely that there will not be testing every day. Scheduling is possible, if required.

### **Antenna Gain**

The antenna has 4 dBi of gain, making it directional. This will allow the signal to reach the ground stations across the required distance at these frequencies.

### **Area of Operations**

The area of operations will be extremely limited. The goal of the testing is to optimize throughput of the data, not to test the distance of the link. Therefore, the flights will be limited to a figure eight pattern around the plant site that is about 25 km in radius.

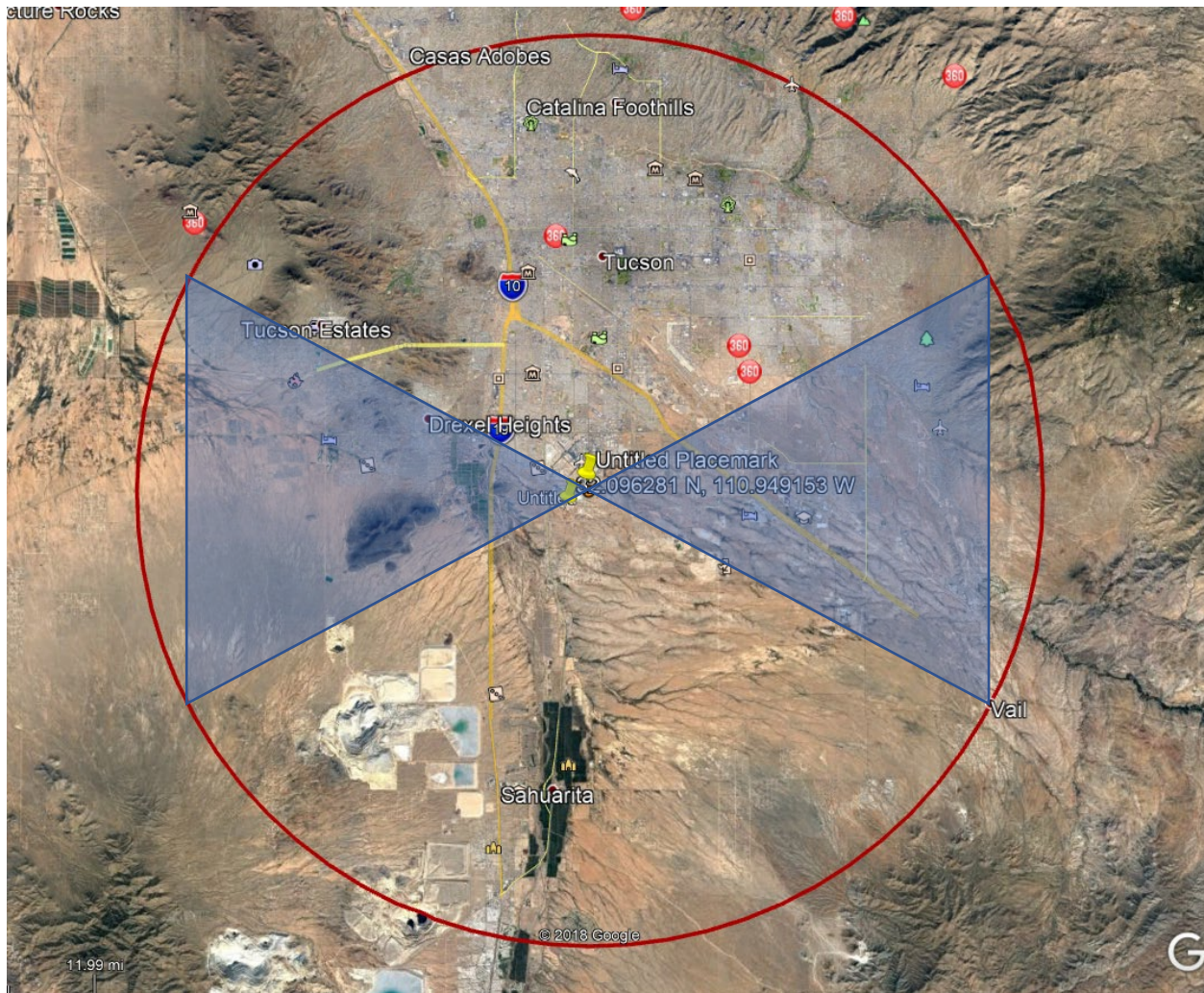


Figure 1. 25 km radius around RMS plant, with theoretical flight pattern overlay

## **Stop Buzzer POC**

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## **Conclusion**

Raytheon is seeking an STA to test a telemetry system to prepare for a summer 2019 customer demonstration. The radios will be used during captive carry flights of the Raytheon products. Testing will take place no more than 1-2 hours per day. The transmissions will be directed at the RMS plant.

If there are questions about these operations, please contact Anne Cortez, Counsel for RMS, at 520-360-0925 or [alc@conspecinternational.com](mailto:alc@conspecinternational.com).