

Raytheon Company (Missiles and Defense – M)  
Experimental STA Application  
File Number: 1148-EX-ST-2020

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

#### **Overview:**

Raytheon Company (Missile and Defense – M) (Raytheon) is the primary missile manufacturer in the US, supplying ordinance ready to operate to the US military. Raytheon's experience with missiles has led its customers to seek UAV technology based on some of its existing platforms and knowledge. This has led Raytheon into the development of advanced UAV technology as well. This application seeks authorization for the use of a radio that is used in the development and testing of its advanced UAVs. The radios incorporated into the UAVs support the mission of the UAV testing.

#### **Need for an STA:**

Raytheon has a contract with the US Army for the advanced development of the UAV systems. The contract number is: HQ 0727-18-F-1632. To meet the milestones in the contract, Raytheon needs to expedite its testing to meet demonstration deadlines. Raytheon has just learned that it needs to prepare for demonstration in early September. An STA will assist in accelerating the process.

#### **Technical Synopsis:**

Spectrum Needed: 1357 MHz, 1362 MHz, 1367 MHz, emission is 10 MHz wide  
Limited Time of Use: only occasional testing at this location  
Limited time of use: 5-6 hours per day of radio use, but only occasional weeks  
Limited area of operations: maximum 3000 feet elevation  
Power levels are low: L band 5.5 W, only 6 W ERP

#### **Description of Operations:**

Raytheon will be taking its Coyote UAS platform for testing and demonstrations in the next several weeks. These demonstrations of the Coyote system are intended to illustrate the platform's ability to perform various tasks required by DoD customers. Some of the proposed operations will highlight performance over water.

This UAV platform has been designed to perform a range of tasks. They include surveillance and monitoring. Those tasks require the UAV to carry a range of radio links to ensure its proper performance. The link being tested will simultaneously perform a wide range of functions.

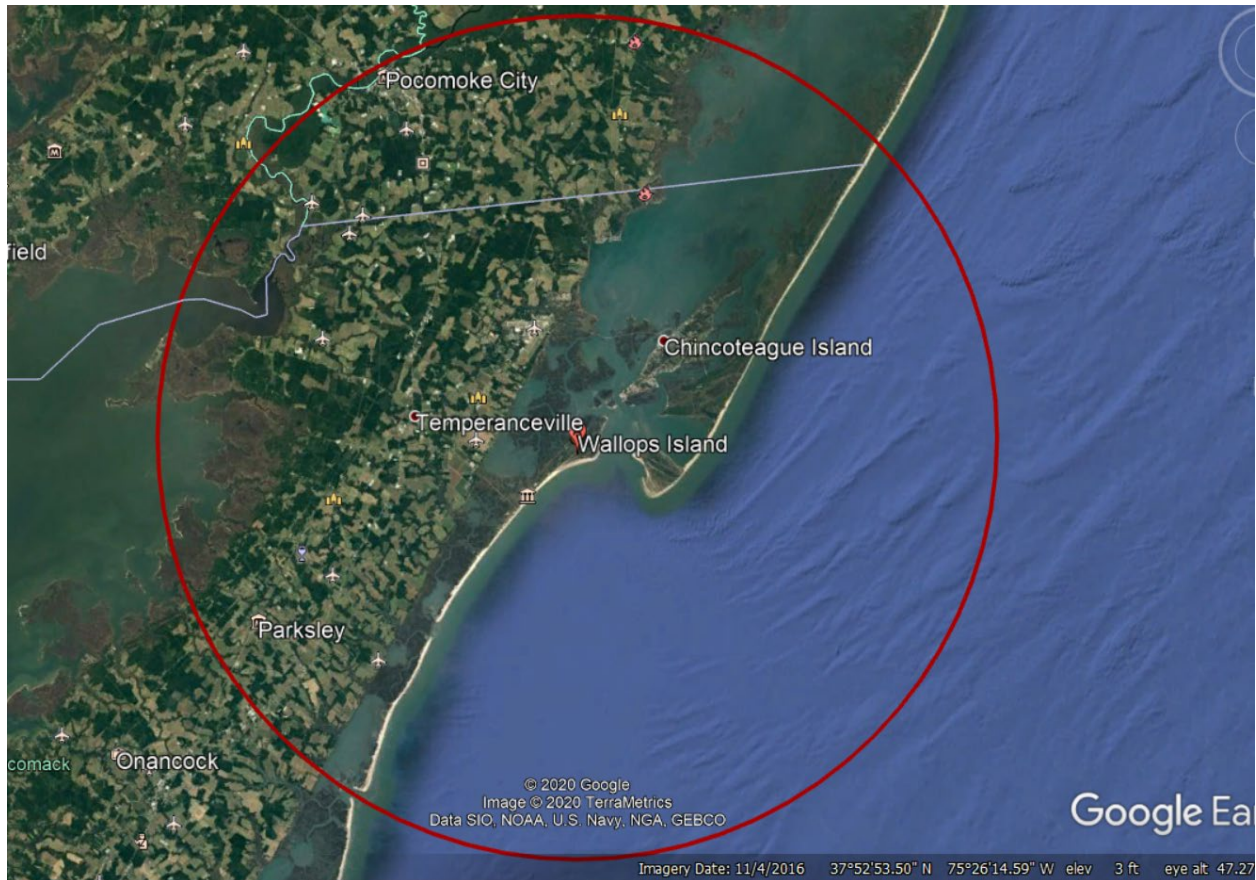
#### **Limited Time of Use:**

The UAVs are tested using batteries. The battery life lasts for a limited amount of time. Because the program will need to process test results, they normally only schedule one test per day to take advantage of overnight recharging for the batteries. The application seeks authorization for testing

across several months, but it will only be at this location for a week at a time, with operations in other locations interspersed.

### **Locations of Testing:**

The testing will be conducted around Wallops Island, Virginia. See below for the operational area. Most operations will be over the Atlantic Ocean.



### **Spectrum Use by Band:**

**L band frequencies:** These frequencies are used as datalinks to transmit data while the UAVs are in flight. These radios use a specifically configured frequency within the band. Most of the spectrum will be unused. The radios are programmed for the flights.

**Local deconfliction:** the program will work with local spectrum managers prior to any flight operations to deconflict radio operations that are local to the area.

### **Stop Buzzer Point of Contact:**

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**Conclusion:**

Raytheon is seeking an STA for temporary, demonstration operations. The demonstrations are to show the development of the Coyote UAV system. The proposed testing will be limited in nature. The radio use will be limited, because the systems will not be tested in all locations at the same time. Furthermore, only selected parts of the frequency bands requested will be in use at any time. The bands were requested to expedite local spectrum coordination.

If there are any questions about this proposed operation, please contact Anne E. Cortez, counsel, Washington Federal Strategies, at 520-360-0925 or [alc@conspecinternational.com](mailto:alc@conspecinternational.com).