

Raytheon Technical Services Company  
Experimental License Application  
File Number: 0066-EX-PL-2014

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

### **Background:**

Raytheon Technical Services Company is a DoD contractor that develops radar and radio systems that are incorporated into a variety of defense technologies. As a result, it needs to experiment with and develop new radios and to test the radio systems to make advances needed by Raytheon's customers.

The current application seeks authorization to extend testing that was started under a special temporary authorization, WG9XTP, for development of an advanced wireless data link for military applications. Initial testing proved fruitful, and Raytheon now needs to extend its testing and development of the technology.

### **Explanation of Experiment:**

Raytheon is working in the 4400-4500 band to develop an advanced wireless data link system that can be used by the US military for a variety of mobile applications, including use in UASs.

#### Synopsis:

- Spectrum needed: 4400-4500 MHz
- Low powered operations: ERP is only 1 W
- Transmissions are directional: limited beamwidth minimizes potential for interference
- Radius of operations limited: while operations are mobile, the radius is only 2 km, with low power transmissions, leading to a small area potentially affected by testing.

The advancements in the data links help to make the transmissions more reliable and enable greater data throughput. The technology development and testing to be conducted under this license will be for DoD customers, but it is being conducted as independent research and development, requiring an experimental license.

#### Stop Buzzer Point of Contact:

The stop buzzer point of contact for this program is:

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Email: robert\_w\_plummer@raytheon.com

Time of Use:

The spectrum will be in use weekdays, but only for portions of each day, since there will be testing, then the test results will be evaluated in the lab, changes will be programmed into the radios, and then another round of testing will be conducted.

**Conclusion:**

Raytheon is seeking authority to continue testing and development of advanced wireless data links operating in the 4400-4500 MHz band. These data links are a key component to military operations using UASs. For more information regarding the proposed experimentation or this application, please contact Brian Kavalari, Spectrum Manager, Raytheon Technical Services Company, [brian\\_r\\_kavalari@raytheon.com](mailto:brian_r_kavalari@raytheon.com) or 317-306-7793, or Anne Cortez, Counsel, Washington Federal Strategies, [alc@conspecinternational.com](mailto:alc@conspecinternational.com) or 520-344-8525.