

Renewal Exhibit – Explanation of Experimentation

Raytheon Missile Systems (Raytheon) is a manufacturer of missiles and related technologies that it sells to the US Department of Defense and other approved customers. Raytheon develops precision positioning and high performance technologies that improve the effectiveness and safety of its products. Many of those technologies require the use of radio signals for command and control, detection, positioning information, and other essential performance characteristics.

Frequencies and required bandwidth: Raytheon is requesting renewal of its authorization for use of a radio system.

- Transmitter frequency: 72.5 MHz
- Occupied Bandwidth: 1 MHz
- Power level: 100 mW

Experiment: This ongoing experiment involves sporadic use of the proposed transmission on the bench, in a laboratory, for over-the-air reception in the lab space. Then, between transmissions, there will be analysis of the nature of the transmissions. The actual on-time of the transmitters will be short and sporadic. During the course of the experiment, the program will continue to gather data for required signal propagation studies as it develops better radio systems and signals that significantly advance the effectiveness of radio transmissions at these frequencies.

Minimal chance of interference to local broadcast or other operations: The proposed spectrum is not in use as broadcast spectrum in Tucson. The lowest frequency broadcast FM radio station in Tucson operates at 88.5 MHz. The television station that operated on Channel 4 has made the DTV transition and is operating at Channel 23.

In the first two years of operation, there have been no instances of any harmful radio interference. Because the low power transmitted signal is spread across 1 MHz of spectrum, the chances of any interference continue to be minimal. Other authorized radio operations in those frequencies continue to filter out most of this signal which will further minimize any potential interference. Raytheon has, and will again, coordinated with the Society of Broadcast Engineers to ensure that there are no interference issues with licensees operating in these frequencies under part 74 of the Commission's Rules.

Stop buzzer: To further ensure that there are no interference problems, Raytheon is providing a stop buzzer point of contact to ensure that the transmissions can be turned off immediately in the event of a problem:

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Conclusion: The ongoing experimentation is intended to advance the study of tactical time and position information transfers. The goal is to further advance radio transmission technologies that are more efficient and effective than those in use today. If there are any questions about this application, please contact Thomas J. Fagan, Spectrum Manager, Raytheon Missile Systems, tjfagan@raytheon.com, (520) 794-0227, or Anne Linton-Cortez, Counsel, alc@conspecinternational.com, (520) 360-0925.