Raytheon Missile Systems
Experimental License Renewal Application
Call Sign: KI2XDD
File Number: 0385-EX-RR-2015

Explanation of Need for License Renewal

Raytheon Missile Systems (Raytheon) is a US defense contractor that develops innovative technologies, in particular for the US military. This division of Raytheon is primarily responsible for the development of advanced missile technologies, including the integrated command and control systems and radar technologies. Raytheon is seeking to renew its license, KI2XDD, to extend authorization to test some of the integrated radio frequency systems on its missile platforms.

Background:

The missile systems under development include advancements in missile guidance, precision, and target acquisition. These systems need to be used in the lab, and then they need to be tested in test flights to ensure that all elements are working properly. As a result, Raytheon is seeking renewed authorization to use the radio systems on this application as it continues to refine the command and control systems and radar technologies.

This application seeks renewed authorization to use the frequencies at several locations on the Raytheon plant in Tucson, Arizona. A parallel filing requests renewed airborne, mobile authorization for use of the frequencies in a 120 km radius around the Raytheon facility. The requests have been separated into two for better tracking and compliance within Raytheon.

Purpose of Experimentation:

Raytheon continues these tests to experiment with new ways to use radar to achieve goals set by the Department of Defense. It is experimenting with various emission types to determine how to optimize the operation of the radio or radar. Further, it is enhancing the use of various spectrum bands at medium and long distances to deliver higher performance radar systems. The experimentation will result in greater understanding of how different signal types are able to perform radar functions with variables for distance, altitude, and frequency to provide information on the optimal configuration.

Description of the Operations – Fixed locations:

There are five fixed locations scattered around the Raytheon plant site in Tucson, AZ.

Site 1 is the aircraft hangar. At this location, the operations are limited to occasional, momentary radio use, when a missile is loaded onto an aircraft for a test flight, and the missile radio systems are turned on, briefly, prior to leaving the hangar to ensure that the radio systems are functioning properly before take-off. This radio operation is highly directionalized, oriented at 134 degrees (southeast), with very brief and sporadic use. Flight tests could be as frequent as two or three times a day. However, flights are generally much less frequent.

Sites 2 through 5 are various test facilities (towers) located in the southwestern portion of the Raytheon facility. From these locations, Raytheon will operate its radio frequency systems to develop and test enhanced radar detection systems.

Time of Spectrum Use:

The radio frequency and radar systems are in use all day long at sites 2 through 5, almost every day, with several radios/radars being on in multiple directions at the same time. In order to keep interference to a minimum, the spectrum management office keeps an on-line scheduling database which is used to slot spectrum use by different programs. All transmissions on and off times are logged, and the spectrum management office monitors the spectrum use.

Fixed Location Transmissions are highly directional:

The antennas at the sites 2 through 5 locations are highly directional, and fixed in orientation. Each of the sites points between 180 degrees and 270 degrees, so only in the south to west quadrant of the compass.

Conclusion:

The experimentation and testing proposed is essential to the advancement of radar technologies incorporated into Raytheon's products. The Stop Buzzer point of contact for these operations is:

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If any additional explanation or information is needed, or if there are questions regarding this application, please contact either Mr. Fagan or Anne Linton Cortez, 520-344-8525 or alc@conspecinternational.com.