

Raytheon Missile Systems
Experimental License Application
File Number: 0073-EX-CN-2017

Exhibit 1 – Explanation of Experiment

Background:

Raytheon Missile Systems is seeking this experimental license to allow it to continue using Raveon radios to provide differential GPS (D-GPS) correction signals to various programs to allow them to use precision positioning for testing for its DOD customers. This application proposes to continue the testing started under STA WK9XBX, which was granted in August 2016, because the current testing has proven fruitful, and Raytheon needs to continue its testing.

Technical Synopsis:

- Spectrum Requested: 451.450 MHz, 471.000 MHz, and 479.500 MHz
- Duty Cycle: The system will have a duty cycle that ranges from 5-20 %
- Power levels: Only 6.1 W ERP requested.
- Occupied bandwidth: only 15 kHz

Explanation of Experiment:

Raytheon has installed D-GPS radios for operation on a mobile basis, from aircraft, at two locations in California under WK9XBX. The radios transmit correction signals that allow for differential correction to the received GPS signal. This allows the receiving antenna to calculate a much more precise position than the use of GPS alone. The use of this technology is essential to the development and testing of Raytheon's products.

Raytheon is seeking to extend its current authorization to test the use of these radios for the provision of the correction signals.

Area of Operation:

Location one is just northwest of Oxnard, California, on the coast, with operations primarily conducted over the ocean, within 160 km of the designated coordinates.

The second location is in Inyokern, California where operations will be conducted over the desert in an 80-kilometer area around the designated coordinates.

The testing at these two locations allows collaborative testing in nearby areas where Raytheon works with its Navy customers.

The maximum altitude of operations will be 10,000 feet.

Limited Potential for Interference:

Raytheon has tried to select the requested channels carefully to avoid the prospect of harmful interference to other authorized licensees in the proposed operational area. There are no television stations licensed on either channel 14 or 15 in the proposed operational areas. Additionally, the proposed operations request a very low effective radiated power level, to avoid propagation of the signal across a broad area.

The duty cycle of the proposed operation ranges from 5% to possibly 20%. Nevertheless, this limited amount of use helps to ensure that the operation of these radios will not affect any other licensed radio operations. The signal is in use from 50 milliseconds to 200 milliseconds. Most radio receivers will dismiss these very short signals as radio noise, and not process them at all.

Stop Buzzer Point of Contact:

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Conclusion:

For further information about this experimental application, please contact Anne Linton Cortez, 520-360-0925, alc@conspecinternational.com or Tom Fagan, 520-794-0227, tjfagan@raytheon.com.