

Raytheon Missile Systems
Experimental License Renewal Application
Call Sign: WJ2XFC
File Number: 0625-EX-CR-2019

Exhibit 1 – Explanation of Experiment

Background:

Raytheon Missile Systems is seeking renewal of its experimental license for the use of 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.

D-GPS technology is essential to precise positioning, and the product testing being conducted off the coast of California requires ongoing use of this D-GPS signal for that level of precision.

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 the D-GPS radios for operation on a mobile basis, from aircraft, at three locations in California. The radios will 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 it can using GPS alone. The use of this technology is essential to the development and testing of Raytheon's products.

This testing began in 2017. It has proven highly effective at helping Raytheon to advance the performance of its missile systems, which are essential to national security. Raytheon requesting a renewal of this authorization to continue using the Raveon radios for provision of the correction signals.

Area of Operation:

Location one is centered on San Nicolas Island, off the coast of California. Most operations are conducted over the Pacific Ocean, within a 50 mile radius.

The second location is centered on San Clemente Island, off the coast of California. Most operations are conducted over the Pacific Ocean, within a 50 mile radius.

The third location is near Point Mugu, California. Again, most operations are conducted over the Pacific Ocean, since the selected location is on the coast, within a 50 mile radius.

The testing at these 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 selected the requested channels carefully to avoid the prospect of harmful interference to other authorized licensees in the operational area. Additionally, the radios operate at 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%. 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 license application, please contact Anne Linton Cortez, 520-360-0925, alc@conspecinternational.com.