

Raytheon Missile Systems
Special Temporary Authorization
File No: 0070-EX-ST-2012

Explanation of Need for STA and Description of Experiment

Raytheon Missile Systems (Raytheon) is a US defense contractor that develops innovative technologies that can be used by the military. Currently, Raytheon's innovation labs in Rancho Cucamonga, California have been working on the development of a new broadband technology. This STA is being filed for the short-term use of that technology for experimentation and demonstration purposes.

Why is an STA appropriate:

An STA is appropriate in this instance because the testing undertaken so far has generated significant new information and further testing is now required to learn about this technology. Raytheon is seeking to extend its STA and then plans to seek an experimental license to continue working on the development of this innovative technology. The first demonstrations took place in December and January, but further work is needed, so Raytheon is seeking this four month extension to its operations.

Description of Experiment:

Currently, Raytheon is working on a new product that uses high bandwidth solid state W-band (91-93 GHz) technology, making it possible to deliver compact, secure communications systems with orders of magnitude reductions in size, weight and power.

Reducing the size, weight and power needed by broadband data links is essential when working in harsh climates. Traditional point to point technologies operating in this frequency band use large antennas that are buffeted by wind. The buffeting causes a significant drop in data rates, which leads to inefficient communications, lowering of available bandwidth, slowing of vital communications, and wasted power by the transmitters. This technology offers significant advances in power consumption, rapid deployment, and effective high-speed data transmissions under all conditions.

At this point, Raytheon needs to extend its original two month FCC authorization to continue testing of experimental technology on its radio test range to improve the way that it works at distances of up to 1 kilometer.

The purpose of the proposed test is to demonstrate the feasibility of using Raytheon's advanced, high-power, solid state W-band technology for communications applications. This test will include measuring the performance of a prototype 320 Mbps, high frequency (91-93 GHz), static communication link at a separation of 1 km between the transmitters. The test will take place at the ITT Loop Canyon Antenna Test facility.

If there are any questions about this application or the proposed use of the spectrum, please contact Thomas J. Fagan, Spectrum Manager, Raytheon Missile Systems, 520-794-0227 or tjfagan@raytheon.com, or Anne Linton-Cortez, Washington Federal Strategies, 520-344-8525 or alc@conspecinternational.com.