

Question 7: Experimentation Description

Rockwell Collins, Inc. (“Rockwell Collins”) seeks to modify its existing experimental license, call sign WF2XMP, to add additional sites to facilitate the experiments described in the exhibits accompanying its original license application (filed July 21, 2010) and subsequent modifications (filed Aug. 2, 2012, Nov. 15, 2013, and June 1, 2015). Specifically, Rockwell Collins seeks to add the following sites:

- Barrow, Alaska
- Dixon, California
- Molokai, Hawaii
- Riverhead, New York
- Melbourne, Florida

These sites will be used for over-the-air testing in support of the U.S. Air Force/Navy research and demonstrations. The purpose is to research higher data throughput capability over the High Frequency (HF) spectrum for mitigating Beyond Line of Sight (BLOS) data transport risks in satellite denied environments. The transmit sites will be used in the over-the-air demonstration and test of 4G ALE software to analyze HF signal propagation and then choose the best frequency of propagation and the supporting modem data rate and bandwidth for high speed data communication.

The additional sites will provide the infrastructure for analyzing HF link performance between sites 2,500 to 3,000 miles apart. The U.S. Air Force BLOS communications requirements in the Pacific region require reliable links up to 3,000 miles. The additional locations enable validation testing to determine if reliable long distant communication links are viable with the new HF technologies.

The 4G ALE software is designed to maximize the data throughput that can be achieved using HF communication equipment. The data collected by the 4G ALE software will be used to independently verify that the best frequency of propagation and data rates are being selected by the software. The over-the-air demonstration is the real time verification of performance that has been tested using HF channel simulators in the laboratory.

Rockwell Collins’s point of contact to resolve any potential interference concerns is Randy Nelson, who can be reached at 319-295-5760.