

Description of Proposed Modification

Rockwell Collins, Inc., a part of Collins Aerospace, (“Collins”) respectfully requests modification of its experimental license with call sign WF2XMP to (1) add additional sites to facilitate the experiments described in its original license application and subsequent modifications and (2) to change the modulating signal information for several of the existing sites associated with the license.

Specifically, Collins seeks to add the following sites:

- Annapolis, Maryland
- Bohemia, New York

These sites will be used for over-the-air testing in support 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 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 communications 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 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.

In addition, Collins seeks to update the modulating signal information associated with several of the existing sites. Specifically, the antennas being used in this experiment support symbol rates up to 38,400 symbols per second. The bandwidth for the antennas being used at the time was modified in 2015, but the symbol rate for those antennas was not correspondingly adjusted. For the HF spectrum used in this experiment, 48 kHz bandwidths use 38,400 symbol rate waveforms. This modification application reflects the increased symbol rate for the antennas that did not already reflect that rate.

Collins’s point of contact to resolve any potential interference concerns is Joe Splean, who can be reached at 319-295-6691.