

Special Temporary Authorization Experiment Background

Rockwell Collins would like to perform experimental testing to show the connectivity between 4 locations within the state of Iowa that demonstrate surface wave, near vertical incidence skywave (NVIS, or just beyond line of site, BLOS) and medium haul (1000 km/640 miles) automatic link establishment (ALE) and communications capabilities. We are trying to establish a current statistical baseline for Mil Std 188-141 ALE signal connectivity between the three sites. The current urgency is to test the northern hemisphere ionospheric winter conditions.

The three sites are located in Iowa:

1. Cedar Rapids, Iowa. Latitude 42-04-05N, Longitude 91-38-37W
2. Manchester, Iowa. Latitude 42-28-35N, Longitude 91-28-14W
3. Decorah, Iowa. Latitude 43-17-55N, Longitude 91-44-36W
4. Bellevue, Iowa. Latitude 42:15:43N, Longitude 90-27-17W

This STA is requested for the time period between January 1, 2004 to May 31, 2004.

Traditionally, Rockwell Collins uses high frequency experiments to test between Cedar Rapids, IA and Richardson, TX for the medium HF testing links. These links are used to establish connectivity for various functions in Propagation (PropMan2000 see at www.propman2000.com), ALE and also for various data modems typically used for HF E-mail. These experiments provide data for our ultimate customers (USAF Scope Command, US Navy (BFEM-66), US Customs (COTHEN), US Coast Guard, US Department of Health and Human Services, Civil Air Patrol, etc.).

Testing between these sites allows the testing of NVIS in the lower part of the HF band forcing antenna and power amplifier emphasis on signal efficiency that is not emphasized in medium or long distance communications.

This added dimension for testing allows more comprehensive system performance testing for Rockwell Collins customers. This baseline has not been established before.

The frequencies desired to be used are (in kHz) 2398, 2810, 3260, 4950, 6060, 6770, 7410, 7990, 9050, 9350, 10400, 10800, 12090, 14550, 15860, 16060, 17450, 18610, 19460, 20460. The emissions designator necessary for this experiment is 5K12B9W.