From: Jonathan Mirsky

To: Doug Young
Date: May 07, 2008

Subject: Request for Info - STA File #0212-EX-ST-2008

Message:

This correspondence, submitted on behalf of HySky Communications, LLC (?HySky?), licensee of WPKU683, responds to your email of May 5, 2008, requesting answers and explanations to questions and comments posed therein with respect to HySky?s application for an STA (File Number 0212-EX-ST-2008). HySky is seeking to test satellite technology for the forward link of its two-way data messaging, locating, telemetry, and monitoring system.

The FCC and the NTIA asked if the EIRP of 1 W set forth in the STA application is correct, in light of the authorized transmitter power of 15 W. The authorization for WPKU683 sets forth authorized transmitter power output of up to 15 W and maximum radiated power of 1 W. However, for the proposed experiment, HySky has now decided to use a transmitter with an output power 5.75 W. (This transmitter has been certified by the FCC, FCC Identifier OH6-4123DHFM.) Radiated power will not exceed 1 W. HySky has calibrated its antennas to ensure compliance with the 1 W maximum radiated power restriction set forth in the authorization for WPKU683.

The FCC and the NTIA asked about the bandwidth of each of HySky?s channels proposed to be used in the experiment. While WPKU683 is authorized with 3 kHz channels, because the emission type is 2K80G1D the energy will be spread over 2.8 kHz, not 3 kHz. Again, this conforms to the existing authorization for WPKU683.

HySky believes that this experiment will result in less interference to other users, not more. Currently, accumulated transmissions by the system on each HF channel must not exceed 36 seconds in each hour in each geographical area in the contiguous United States bounded by each 5 degrees of latitude (beginning at 49° North Latitude and proceeding Southward) and each 5 degrees of longitude (beginning at 70° West Longitude and proceeding Westward). The duration of each HF transmission by each transmitter must not exceed 4 seconds. Before transmitting, HySky, using diverse receive sites, determines a channel is clear and that determination is valid for 10 seconds. That means that under the existing WPKU683 authorization there is sometimes interference to other users, because the master control center could declare a channel clear but another user could begin transmitting on that channel during the 10 second transmission window.

Significantly, to perform this experiment HySky is not seeking to increase the duration of transmissions. Rather, HySky is proposing to exponentially cut its channel occupancy for the experiment. This will more than offset the increased likelihood of another user beginning to transmit during the longer transmission window. If the validity of channel occupancy assessments increases from 10 seconds to 30 seconds, the risk increases of another user beginning to transmit on a particular frequency that has been declared clear. But if overall channel occupancy decreases from a maximum of 36 seconds per hour in each defined geographical area to a maximum of 3.6 seconds per hour in each defined geographical area, the likelihood that any of HySky?s HF response links will be transmitting during that transmission window is much lower. So HySky?s experiment does not pose any new risk to other users and in fact should result in less interference to other users than is currently allowed.

HySky?s system will test for channel volatility in addition to channel use in order to evaluate whether another user is intermittently using frequencies. So under the proposed STA HySky will ?look ahead? insofar as a channel will not be deemed clear by the master control center if it is being used intermittently.

In addition, HySky is committed to minimizing interference to other users during its experiment. HySky

will use a spread pseudo-noise modulation to minimize impact if a concurrent transmission occurs. Even if interference were to occur, for other users it would be no worse than the noise burst from a distant thunderstorm.

HySky?s system has been authorized for more than a decade, and interference with other users has not been a problem. If the STA is approved, HySky will be making fewer transmissions than currently authorized, not more.