

23 May, 2016

The Honorable Tom Wheeler
Chairman, Federal Communications Commission
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Re: IB Docket No. 12-340; Comment on Ligado's Modification Applications

Dear Mr. Chairman,

On behalf of its geodetic community that relies on GPS as a primary tool for geoscience and hazard research, UNAVCO opposes Ligado's proposed use of the L-band MSS spectrum for a commercial terrestrial broadband network. We believe that the FCC should act with caution in order to ensure that GPS is protected from harmful interference. Testing conducted by many agencies has shown that by a variety of criteria that Ligado has not demonstrated that their operations will not harm GPS users, and we feel strongly their application should be denied.

UNAVCO is a member-governed university consortium, an organization that is uniquely positioned to advance and support geodesy community science goals. In addition to 111 US universities, UNAVCO supports 102 organizations as associate members that share UNAVCO's mission and benefit from its programs and services. The National Science Foundation (NSF) and NASA fund UNAVCO through cooperative agreements.

UNAVCO was formed in 1984 by earth science and atmospheric researchers who pioneered the usage of specialized Global Positioning System (GPS) hardware for high-precision studies. In the 32 years since, the UNAVCO Community has used GPS to make numerous discoveries regarding the nature of the solid earth and atmosphere, including the fundamental understanding of the processes of plate tectonics, earthquakes, volcanic eruptions and significant weather events. UNAVCO operates or supports approximately 2000 high-precision GPS monitoring stations in the U.S., including the 1100-station Plate Boundary Observatory (PBO), the geodetic component of the NSF's EarthScope Project in which \$100 million was invested for construction between 2003 – 2008; taken together with subsequent operations and maintenance and other UNAVCO projects to date, an investment of \$190,000,000 of taxpayer investment since 2003 is at stake.

Results of tests conducted earlier this year by Roberson & Associates showed that all types of GPS devices were severely affected by Ligado's proposed terrestrial MSS broadcasts, especially the newest state-of-the-art high-precision receivers that are in widespread use in our research. Last month UNAVCO participated in testing sponsored by the US Department of Transportation at the Army Research Laboratory at White Sands, NM, and our preliminary results show that even Ligado's proposed low-power broadcasts will drastically affect our hardware performance.

We urge the FCC to deny Ligado's application and to prohibit any terrestrial broadcasts in the MSS band until it can be conclusively demonstrated that longstanding GPS users will not be adversely affected. While nationwide availability of Wireless Broadband Internet is an important goal for the future of our nation, its realization must not be accomplished at the expense of established infrastructure. Please do not jeopardize GPS signals used by UNAVCO and its community over 32 years for the advancement of knowledge and natural hazards research.

Respectfully,



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