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2000 Florida Avenue, NW
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16 December 2016

The Honorable Penny Pritzker
Secretary, U.S. Department of Commerce
1401 Constitution Ave. NW
Washington, DC 20230

Re: Encourage FCC to reject proposal to share NOAA's spectrum (1675-1680 MHz)

Dear Secretary Pritzker,

On behalf of the Earth science community, we are writing to encourage you to support NOAA's mission by working to protect the nation's access to real-time weather and water information. We believe sharing 1675-1680 MHz with a commercial entity will almost certainly interfere seriously with non-federal government users of this band who, in partnership with NOAA, play a crucial role in saving life and property from weather hazards.

In your tenure as Secretary of Commerce, you have supported NOAA's mission to understand and predict changes in climate, weather, oceans, and coasts, and to share that knowledge and information with the public. The launch of the GOES-R satellite last month is an unparalleled advancement in the Nation's capability for environmental prediction and innovation.

However, the full potential of the GOES-RSTU satellite series, with GOES-16 now in orbit, and particularly its real-time information to fuel innovation, is in jeopardy. While our community recognizes the importance of the efforts of NTIA to implement the presidential initiative to free up 500 MHz of federal spectrum for private sector use, we are deeply concerned by the current proposal by Ligado Networks, which seeks to take away the bandwidth to be used to downlink real-time information from the GOES-R satellite series.

Creating a weather-ready nation involves significant efforts by government, private sector, and academic stakeholders working together with real-time information. In just the past few months, severe environmental events such as Hurricane Matthew and billion-dollar wildfires in Tennessee have stressed the nation's infrastructure. Damage from events like these justify our best efforts to protect business and the general public. If allowed to move forward, the spectrum sharing Ligado proposes will likely impede needed access to real-time and near-real-time data from GOES-R satellites, except to a few NOAA ground stations. The alternate cloud-based transmission system currently proposed by Ligado will not support critical forecasting and communication needs in the most severe weather situations, such as hurricane-induced coastal flooding, extreme precipitation events, or time-critical tornado warning predictions.

The Earth science community and its stakeholders have worked hard to communicate the danger of the plan to share 1675-1680 MHz with the terrestrial wireless network proposed by Ligado. More than 70 Earth science community stakeholder entities, ranging from small to large companies, state, local and foreign governments, and international and domestic organizations provided comments[i] or briefings to the FCC expressing considerable concern about Ligado's proposal.

Some of the highlights of the points made by the Earth science community include:

- NOAA has already given up 50 percent of its spectrum in 1670-1710 MHz for repurposing or shared use, even redesigning the GOES-R satellite once to contribute to the effort to free up federal spectrum for private sector innovation.
- Protection zones are only proposed for limited federal sites – likely subjecting non-federal aviation, maritime users, flood control districts, and water managers to interference[ii]. Zone concepts currently proposed offer no protection to non-federal and some not selected Federal users.
- Ligado has not contested the assertion that unprotected sites will incur radio frequency interference if its proposal is granted.
- The protection zones proposed for certain key NOAA sites are likely insufficient and will still be subject to significant interference, especially because Ligado's terrestrial signals will be 20 million times stronger than the signals coming from NOAA's geostationary satellites and located on top of the GOES-R relay spectrum for 27,000 terrestrial sensors throughout the hemisphere.
- The alternate cloud-based distribution system currently proposed by Ligado is inadequate. It depends on terrestrial infrastructure that often fails under severe conditions when power, internet, and wireless systems are compromised or unavailable – such as was seen recently in Sevier County, TN, during the recent wildfires. Ligado offers no plan on how to fund such an alternative system after ten years, which is an unacceptable uncertainty to users.

In addition, we are concerned about Ligado's engagement with the Earth and space science community. Most recently, members of the meteorological community met with Ligado this past July during an American Meteorological Society meeting in Alabama to express concerns with their proposal. In our judgment, Ligado has been unresponsive to our comments. The company has not modified any of its statements and has been dismissive of our concerns. Instead, in their most recent correspondence to Administrators Sullivan and Strickling, it questioned the Earth science community's understanding of physics. Such communications suggest that Ligado is dismissive of these issues and not a good faith partner in our effort to protect the nation's severe weather forecasting capabilities.

We are grateful for all you have accomplished during your tenure as Secretary of Commerce to support the nation's severe weather forecasting, and we are most anxious to preserve that legacy. The 2010 Presidential Memorandum on spectrum directed[iii] that [repurposing or sharing] "must take into account the need to ensure no loss of critical existing and planned Federal, State, local and tribal government capabilities." No one disputes that GOES-R satellite data constitutes a critical capability. We urge you to encourage the FCC to reject Ligado's sharing proposal outright without establishing a further FCC Notice of Proposed Rulemaking on this matter.

Respectfully,

Keith L. Seitter
Executive Director
American Meteorological Society

Christine W. McEntee
CEO/Executive Director
American Geophysical Union

cc: Kathryn Sullivan, NOAA Administrator
Lawrence Strickling, NTIA Administrator

[i] FCC Proceeding RM-11681

[ii] https://ecfsapi.fcc.gov/file/10222146123052/Ligado%20Ex%20Parte%20--%20Response%20to%20Hydrometorological%20Parties%20(Oct.%2021,%202016).pdf

[iii] https://www.whitehouse.gov/the-press-office/presidential-memorandum-unleashing-wireless-broadband-revolution Section1 (b)