

**Congress of the United States**  
**House of Representatives**

Washington, DC 20515

July 9, 2020

**The Honorable Ajit Pai**

Chairman

Federal Communication Commission

445 12<sup>th</sup> Street, SW

Washington, DC 20554

**Re: Precision Agriculture Impacts of Ligado Proceedings, DA/FCC 20-48, IB Docket No. 11-109 and IB Docket No. 12-340.**

Dear Chairman Pai:

We write to express our concerns with the Federal Communications Commission (FCC) Order announced on April 20, 2020, granting Ligado's application to deploy a terrestrial nationwide network to provide 5G services. Specifically, we are concerned the Order does not sufficiently protect adjacent band operations—specifically those related to the Global Positioning System (GPS) and satellite communications—from harmful interference that would impact numerous organizations throughout the precision agriculture industry.

The GPS program represents one of the finest examples of U.S. innovation and ingenuity. It demonstrates the significant benefits of government investment in research and development. By allowing for the commercialization of GPS technology, we have seen more than \$1.4 trillion in economic impact, the creation of millions of jobs, and the birth of countless new businesses.

GPS is critically important to the commercial agriculture, mining, forestry, and rural manufacturing industries. In fact, GPS has become the single most significant technological advancement for American farm equipment in the past two decades. According to a 2019 RTI International study, since 1998, GPS adoption in agriculture has yielded more than \$5.8 billion in economic benefits. The study also found that during planting season, if GPS were interrupted, the economic impact to the agriculture sector could amount to losses of \$15 billion due to lower crop yields. Moreover, an earlier study suggested GPS-enabled precision agriculture could save farmers an estimated 10 to 15 percent in operating costs and purchased inputs. This same study estimated the benefits of GPS to precision agriculture between \$10 and \$17 billion.

While the FCC Order acknowledges this interference will impact users in the federal government and requires Ligado to upgrade or replace these devices, the Order fails to require Ligado to accept responsibility for the millions of private devices that will be affected. This will force numerous industries, including agriculture, who use this technology to either suffer interference to their GPS devices, initiate burdensome and ill-defined procedures to address this interference, or to pay to replace them.

In order to better understand the FCC's decision-making process and the impact of the FCC's order, we would appreciate your response to the following questions:

- The FCC relied on studies that tested approximately 50 GPS receivers to conclude that the risk of harmful interference from Ligado's proposed operations to GPS is not sufficient to justify denial of its applications. How many of the GPS receivers used specifically for precision agriculture applications were included in these tests? On what basis did the Commission conclude that the receiver(s) tested were representative of the totality of precision ag GPS receivers?
- We understand that the FCC rejected the interference standard supported by government agencies that rely heavily on GPS in favor of defining harmful interference as interference which "endangers the functioning" or "seriously degrades, obstructs, or repeatedly interrupts the functioning of a device." In the context of use of GPS in precision agriculture, has the FCC defined what constitutes serious degradation of the functioning of a precision agriculture device or application that relies on GPS? If not, how will this be done? Why is degradation that is less than "serious" acceptable for a critical application like precision agriculture?
- If interference is determined, what repairs are available? What is the cost of these repairs, and who will bear this cost? How long will it take for a farmer or rancher to repair equipment? What tools are available for management of operations while these repairs are being completed? What is the impact of this disruption on farming operations?
- The US Department of Agriculture is a member of the National Executive Committee for Space-Based Positioning, Navigation and Timing. Was USDA consulted on this matter? If so, what feedback was provided?
- Was a cost/benefit analysis conducted for the impact of GPS interference on precision agriculture, including the costs of detecting and reporting interference? If so, please provide this data.
- We understand that this definition of harmful interference was developed by outside experts through the FCC's Technical Advisory Council (TAC). Does the TAC have any representatives from the precision agriculture industry?

We must ensure the United States continues to be a leader in 5G deployment and development. However, we believe the Ligado decision will slow the progress of our economy and interfere with the operation of GPS. For these reasons, we urge the Federal Communications Commission to immediately reconsider their Order on this matter and provide a path forward addressing our concerns.

Sincerely,



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Glenn "GT" Thompson  
Member of Congress



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Collin Peterson  
Member of Congress



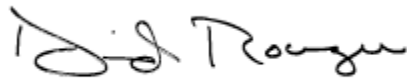
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James Comer  
Member of Congress



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Roger Marshall, M.D  
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