

June 4, 2020

The Honorable Ajit Pai
Chairman
Federal Communications Commission
445 12th Street S.W.
Washington, D.C. 20554

Dear Chairman Pai:

Commercial radio spectrum has forever changed how Americans live and work across our country with countless opportunities for innovation that will improve the quality of life for Americans. These opportunities will only be compounded by new licensed and unlicensed technologies applications on the horizon.

Accordingly, America's spectrum policies must promote the efficient use of spectrum in order for the United States to maintain its global leadership in wireless deployments and innovation. As the regulatory agency that oversees commercial spectrum in the United States, Congress has entrusted the Federal Communications Commission (FCC) to make important technical and data-driven decisions regarding spectrum allocation and interference. It is important that the FCC continues to make, and is able to make, decisions that ensure our spectrum is used for its highest and best use while also adequately addressing legitimate concerns about adopted spectrum policies.

As you are well aware, the Senate Armed Services Committee (SASC) recently held a hearing, titled "Department of Defense Spectrum Policy and the Impact of the Federal Communications Commission's Ligado Decision on National Security." We appreciate that SASC considered the Department of Defense's position on the use of this spectrum, but SASC only heard testimony in opposition to the modification of Ligado's license. To ensure that members of Congress and the American public are informed about the FCC's decision to modify technical aspects of Ligado's license, we request the FCC respond to the following questions:

- (1) How long was the Ligado proceeding on the Commission's docket?
- (2) Did the FCC give other federal agencies notice of the final order prior to its release on April 16, 2020? If so, which agencies, when were they given notice, and what specific opportunities for input were they afforded prior to the issuance of the final order? What other dialogue or discussions did you maintain with federal agencies throughout this process?
- (3) The Federal Aviation Administration (FAA) made recommendations to the Commission to protect certified aviation devices from harmful interference. Did the Commission adopt these recommendations?
- (4) In December 2019, the NTIA sent the FCC a letter that explained it was "unable to recommend the Commission's approval of the Ligado applications." Please describe NTIA's concerns and what steps, if any, the FCC took to address them? Which concerns did the FCC disagree with and why?
- (5) During the SASC hearing, critics of the decision suggested that the selection of National Advanced Spectrum and Communications Test Network (NASCTN) to conduct a study on interference was made by Ligado and therefore produced biased results in favor of Ligado's position. What is the NASCTN? And how does the Commission respond to this assertion?

- (6) Reports indicate that Ligado entered into co-existence agreements with the major GPS equipment manufacturers. Could you provide a list of which GPS manufacturers that entered into such agreements? Roughly what percentage of the GPS market is represented by the manufacturers with these co-existence agreements?
- (7) The Commission required Ligado to use a 23 MHz guardband consisting of Ligado's own spectrum. Why does the Commission believe that this guardband will protect from harmful interference?
- (8) Opponents of the FCC's decision have suggested that the guardband is insufficient because GPS receivers are designed to tolerate interference from space systems in adjacent spectrum, but not interference from terrestrial systems in that spectrum. Did the Commission consider and address this concern? If so, how?
- (9) Is 1db a standard metric that the Commission has used previously for determinations of harmful interference to adjacent bands? Why was 1db not adopted by the Commission in this instance? If 1db is not the Commission's standard, how would the use of a 1db standard as proposed by some affect current wireless communications?
- (10) The Commission's order required Ligado to operate its base stations at a 99.3% reduced power level from its original proposal. Why did the Commission conclude that this reduced power level will allow Ligado to operate a terrestrial network that can co-exist with operations in adjacent spectrum bands?
- (11) The Commission required Ligado to have an "emergency shut off switch" after a notification of credible interference. When would Ligado be required to shut off its network? Has the Commission previously required an "emergency shut off switch" on spectrum license holders?
- (12) What notification requirements did the Commission place on Ligado prior to base station activations?
- (13) Please describe the FCC's evaluation of the Ligado application and why the FCC believes granting this application is in the public interest?

There is no doubt that in order for the United States to meet its demand for spectrum, we need an effective spectrum strategy that continues to enable innovation while avoiding harmful interference **identified by science-based engineering and technical analysis**. We look forward to hearing back from you.

Sincerely,



Mike Lee
United States Senator



Brian Schatz
United States Senator



Ron Johnson
United States Senator



Edward J. Markey
United States Senator



Ted Cruz
United States Senator



Mark R. Warner
United States Senator



John Thune
United States Senator



Chris Coons
United States Senator