



FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON

OFFICE OF
THE CHAIRMAN

June 8, 2020

The Honorable John Barrasso
United States Senate
307 Dirksen Senate Office Building
Washington, DC 20510

Dear Senator Barrasso:

Thank you for your letter regarding the Commission's unanimous, bipartisan decision to approve with stringent conditions Ligado's application to deploy a low-power terrestrial network in L-band spectrum. These conditions serve to protect GPS operations, which are important to our national security and economy, from harmful interference. I appreciate this opportunity to clarify the facts regarding this matter.

At the outset, I want to stress that protecting the national security and safety of the American people is a critical priority for me. That is why the Commission under my leadership has taken repeated actions to secure the 5G supply chain and to eliminate threats to national security within our networks. And that is why I've personally collaborated with the Department of Defense on everything from accommodating its needs in the 3.5 GHz and 37 GHz bands to speaking publicly in support of the Department's nascent 5G experiments.

The FCC also has an important job to do with regard to connectivity generally and 5G specifically, and we must position ourselves as a global leader in innovation and technology, as well as develop the spectrum resources needed to support these efforts. Our 5G FAST Plan emphasizes the importance of making more spectrum available for commercial use—it is a blueprint for the future—and our staff is constantly working to find ways to maximize efficient use of spectrum for commercial use. Our work on the L-band is part of this effort.

Your letter implies that the Commission's decision was hurried through during a national crisis and failed to permit appropriate input by other agencies or affected stakeholders. This was not the case. The Commission followed to the letter both the law and our rules in adjudicating this matter.

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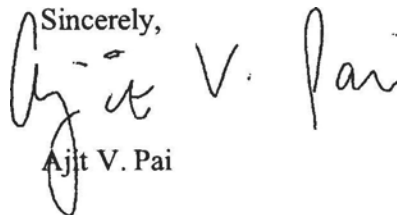
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I appreciate this opportunity to answer your questions related to the Commission's unanimous, bipartisan decision to continue promoting American leadership in 5G and to protect the important services enabled by GPS.

Sincerely,

Ajit V. Pai



FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON

OFFICE OF
THE CHAIRMAN

June 8, 2020

The Honorable Michael Bennet
United States Senate
261 Russell Senate Office Building
Washington, DC 20510

Dear Senator Bennet:

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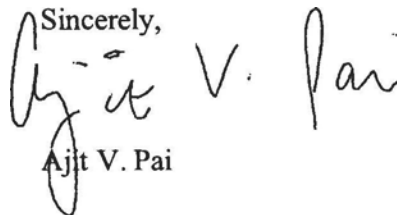
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OFFICE OF
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June 8, 2020

The Honorable John Boozman
United States Senate
141 Hart Senate Office Building
Washington, DC 20510

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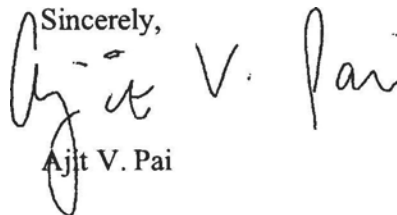
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June 8, 2020

The Honorable Maria Cantwell
United States Senate
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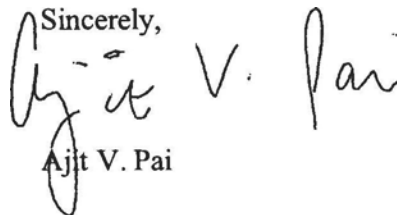
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June 8, 2020

The Honorable Bill Cassidy
United States Senate
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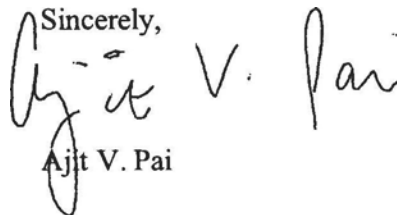
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At the outset, I want to stress that protecting the national security and safety of the American people is a critical priority for me. That is why the Commission under my leadership has taken repeated actions to secure the 5G supply chain and to eliminate threats to national security within our networks. And that is why I've personally collaborated with the Department of Defense on everything from accommodating its needs in the 3.5 GHz and 37 GHz bands to speaking publicly in support of the Department's nascent 5G experiments.

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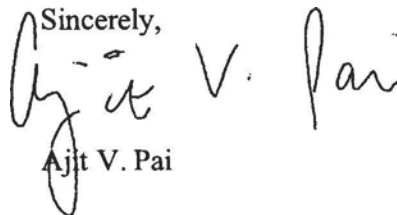
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Sincerely,

Ajit V. Pai



FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON

OFFICE OF
THE CHAIRMAN

June 8, 2020

The Honorable Kevin Cramer
United States Senate
400 Russell Senate Office Building
Washington, DC 20510

Dear Senator Cramer:

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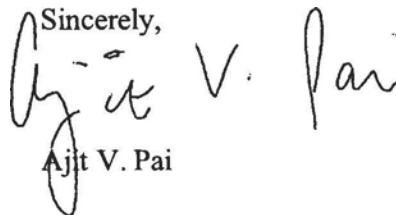
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Sincerely,

Ajit V. Pai



FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON

OFFICE OF
THE CHAIRMAN

June 8, 2020

The Honorable Tammy Duckworth
United States Senate
524 Hart Senate Office Building
Washington, DC 20510

Dear Senator Duckworth:

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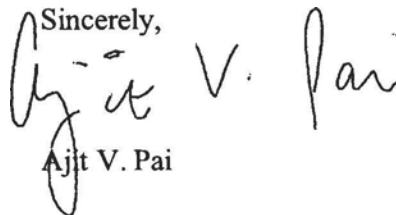
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FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON

OFFICE OF
THE CHAIRMAN

June 8, 2020

The Honorable Michael B. Enzi
United States Senate
379A Russell Senate Office Building
Washington, DC 20510

Dear Senator Enzi:

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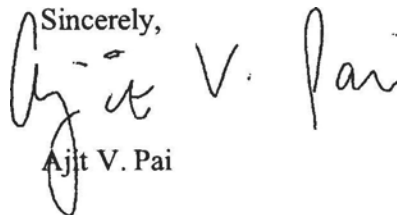
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FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON

OFFICE OF
THE CHAIRMAN

June 8, 2020

The Honorable Joni Ernst
United States Senate
730 Hart Senate Office Building
Washington, DC 20510

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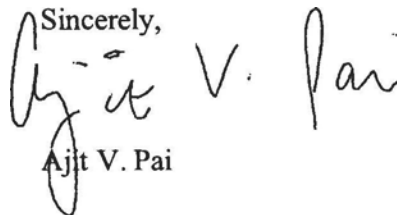
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FEDERAL COMMUNICATIONS COMMISSION
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OFFICE OF
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June 8, 2020

The Honorable Deb Fischer
United States Senate
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Washington, DC 20510

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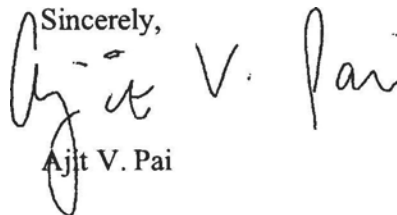
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Sincerely,

Ajit V. Pai



FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON

OFFICE OF
THE CHAIRMAN

June 8, 2020

The Honorable Charles E. Grassley
United States Senate
135 Hart Senate Office Building
Washington, DC 20510

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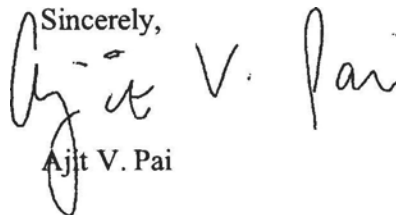
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FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON

OFFICE OF
THE CHAIRMAN

June 8, 2020

The Honorable Mazie K. Hirono
United States Senate
730 Hart Senate Office Building
Washington, DC 20510

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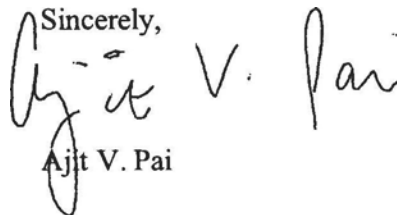
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FEDERAL COMMUNICATIONS COMMISSION
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OFFICE OF
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June 8, 2020

The Honorable John Hoeven
United States Senate
338 Russell Senate Office Building
Washington, DC 20510

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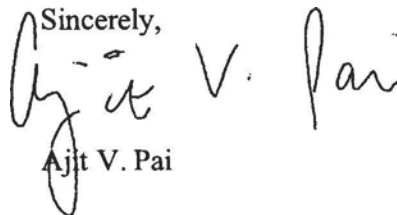
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June 8, 2020

The Honorable James M. Inhofe
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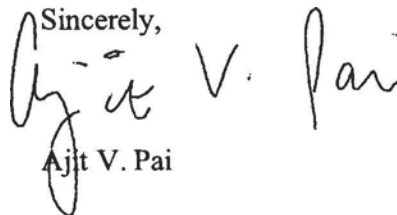
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June 8, 2020

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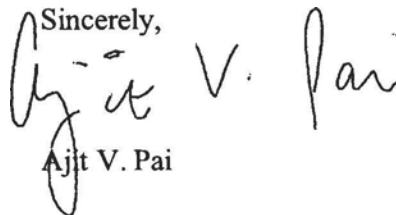
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Sincerely,

Ajit V. Pai



OFFICE OF
THE CHAIRMAN

FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON

June 8, 2020

The Honorable Angus King
United States Senate
133 Hart Senate Office Building
Washington, DC 20510

Dear Senator King:

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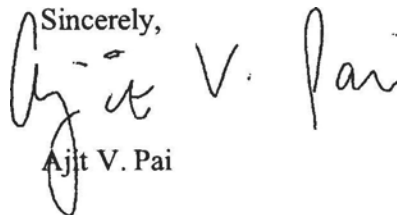
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FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON

OFFICE OF
THE CHAIRMAN

June 8, 2020

The Honorable Joe Manchin
United States Senate
306 Hart Senate Office Building
Washington, DC 20510

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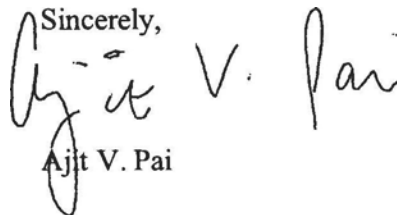
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FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON

OFFICE OF
THE CHAIRMAN

June 8, 2020

The Honorable Martha McSally
United States Senate
404 Russell Senate Office Building
Washington, DC 20510

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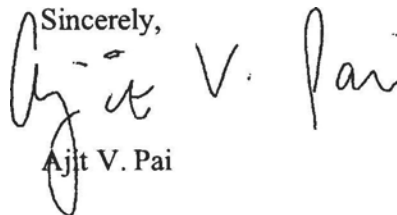
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FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON

OFFICE OF
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June 8, 2020

The Honorable Lisa Murkowski
United States Senate
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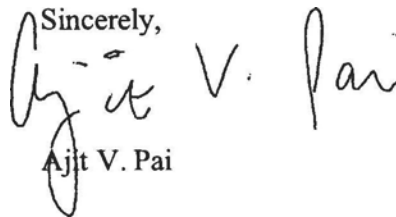
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FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON

June 8, 2020

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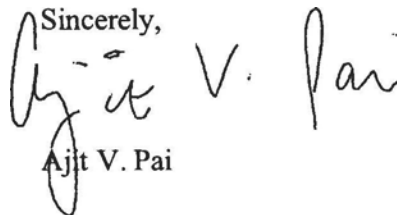
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Sincerely,

Ajit V. Pai



OFFICE OF
THE CHAIRMAN

FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON

June 8, 2020

The Honorable Gary Peters
United States Senate
724 Hart Senate Office Building
Washington, DC 20510

Dear Senator Peters:

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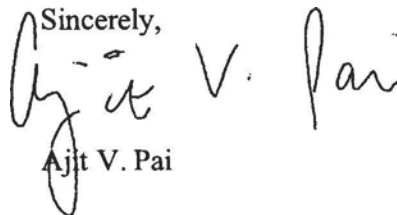
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Sincerely,

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FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON

OFFICE OF
THE CHAIRMAN

June 8, 2020

The Honorable Rob Portman
United States Senate
448 Russell Senate Office Building
Washington, DC 20510

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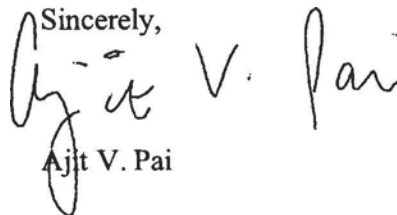
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FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON

OFFICE OF
THE CHAIRMAN

June 8, 2020

The Honorable Jack Reed
United States Senate
728 Hart Senate Office Building
Washington, DC 20510

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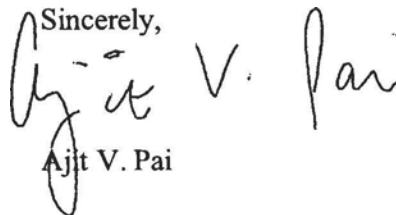
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FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON

OFFICE OF
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June 8, 2020

The Honorable Pat Roberts
United States Senate
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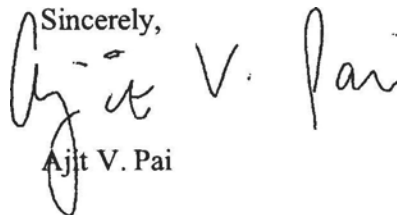
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FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON

OFFICE OF
THE CHAIRMAN

June 8, 2020

The Honorable Mike Rounds
United States Senate
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Washington, DC 20510

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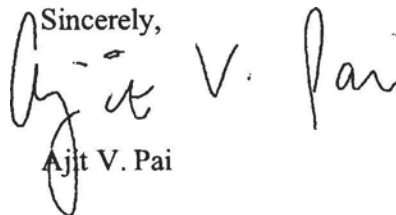
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Sincerely,

Ajit V. Pai



FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON

OFFICE OF
THE CHAIRMAN

June 8, 2020

The Honorable Rick L. Scott
United States Senate
716 Hart Senate Office Building
Washington, DC 20510

Dear Senator Scott:

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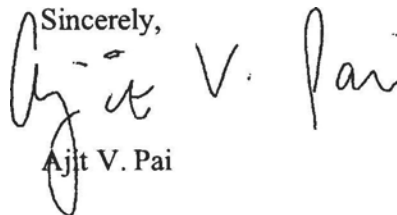
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Ajit V. Pai



OFFICE OF
THE CHAIRMAN

FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON

June 8, 2020

The Honorable Jeanne Shaheen
United States Senate
506 Hart Senate Office Building
Washington, DC 20510

Dear Senator Shaheen:

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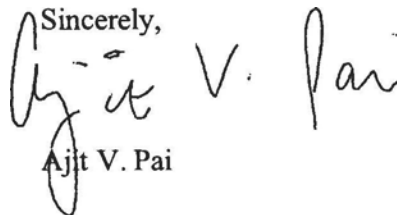
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FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON

OFFICE OF
THE CHAIRMAN

June 8, 2020

The Honorable Kyrsten Sinema
United States Senate
317 Hart Senate Office Building
Washington, DC 20510

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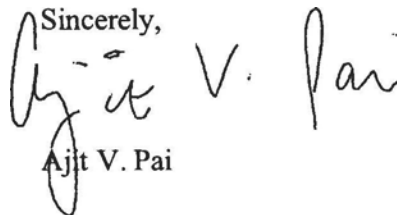
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FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON

OFFICE OF
THE CHAIRMAN

June 8, 2020

The Honorable Cindy Hyde-Smith
United States Senate
702 Hart Senate Office Building
Washington, DC 20510

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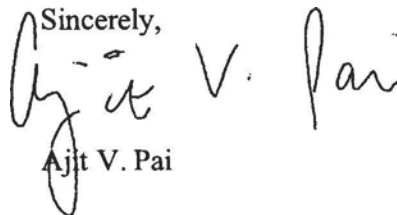
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FEDERAL COMMUNICATIONS COMMISSION
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OFFICE OF
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June 8, 2020

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United States Senate
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Thank you for your letter regarding the Commission's unanimous, bipartisan decision to approve with stringent conditions Ligado's application to deploy a low-power terrestrial network in L-band spectrum. These conditions serve to protect GPS operations, which are important to our national security and economy, from harmful interference. I appreciate this opportunity to clarify the facts regarding this matter.

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The FCC also has an important job to do with regard to connectivity generally and 5G specifically, and we must position ourselves as a global leader in innovation and technology, as well as develop the spectrum resources needed to support these efforts. Our 5G FAST Plan emphasizes the importance of making more spectrum available for commercial use—it is a blueprint for the future—and our staff is constantly working to find ways to maximize efficient use of spectrum for commercial use. Our work on the L-band is part of this effort.

Your letter implies that the Commission's decision was hurried through during a national crisis and failed to permit appropriate input by other agencies or affected stakeholders. This was not the case. The Commission followed the letter both the law and our rules in adjudicating this matter.

It is important to recognize that, like other administrative agencies, the FCC makes its decisions based on the record before it. As such, the Commission maintained an open and transparent process in considering Ligado's proposed terrestrial network. In 2011, the Commission promoted the creation of a Technical Working Group to address interference concerns raised by federal agencies, including the Department of Defense, about the potential effects of Ligado's proposed network on GPS. Over the next two years, the Commission then sought comment *four separate times* on issues related to Ligado's proposal. After Ligado submitted revised license modification applications in December 2015, the Commission sought comment through an April 2016 Public Notice. When Ligado amended those applications in

May 2018, the Commission yet again put the applications out for comment in June 2018. In response to each of these notices, interested stakeholders, as well as federal agencies like the Department of Defense, were free to submit to the Commission any information they believed necessary and appropriate. The Commission received numerous submissions in response to these requests for comments, as well as comments on the tests and analyses submitted in the record.

But that is not all. In October 2019, the Commission sent a draft decision proposing to grant Ligado's application to the National Telecommunications and Information Administration for coordination through the Interdepartment Radio Advisory Committee (which includes the Department of Defense). The Department of Defense and other federal agencies then had the opportunity to provide feedback on that draft decision. In the typical situation, there is a three-week period for that feedback to be provided. But in order to give the Department of Defense and other agencies more time to formulate comments on the FCC's draft decision, the Commission agreed to extend that three-week period for an additional month. And after receiving input from federal agencies in December 2019, when the Department of Defense informed the Commission that it had additional information that it wanted to submit into the public record, the FCC paused further work on the application until March, so that the Department would have yet another opportunity to share its views with the Commission.

To put all this another way: The Department of Defense had actual possession of the draft that the FCC was poised to adopt—and thus an opportunity to comment on it—for almost *half a year* before the FCC finally adopted it. Moreover, prior to the Commission's decision in this matter, I personally spoke with Secretary of Defense Mark Esper, Under Secretary of Defense for Research and Engineering Michael Griffin, and Deputy Under Secretary of Defense for Research and Engineering Lisa Porter to ensure that the Department had every possible opportunity to make its case to the Commission.

In the final analysis, we relied on the technical data submitted in the record, including all relevant information provided by the federal agencies, as well as the comments we received. Importantly, we adopted operating restrictions and conditions as additional safeguards to ensure that GPS operations are protected from harmful interference. These protective conditions include a 99% reduction in power for downlink operations. Ligado also must establish a 23-megahertz guard band using its own licensed spectrum. It must consult relevant federal agencies prior to particular deployments and commencement of operations. It must develop a program to repair or replace any potentially affected devices in a manner consistent with the relevant agency's programmatic needs.

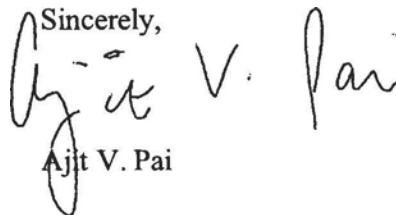
Furthermore, if the Department of Defense determines, based on the base station and technical operating data Ligado is required to make available to it, that Ligado's operations will cause harmful interference to a specific, identified GPS receiver operating on a military installation and that the GPS receiver is incapable of being fully tested or replaced, then Ligado must negotiate with the Department to determine an acceptable received power level over the military installation in question. And finally, the FCC has placed on Ligado the burden of resolving any instance of harmful interference, including through the creation of a "stop buzzer" capability that can cease all transmissions within 15 minutes of receiving a request from the

Commission. While many would argue that these conditions go beyond what is necessary given the evidence in the record, I thought that it was important for the Commission to go the extra mile to ensure that national security would be protected.

The bottom line is this: The process followed in this proceeding, including seeking input from stakeholders throughout this process, was both completely consistent with the Administrative Procedure Act and far, far more generous than in any other proceeding of which I am aware (not to mention far, far more delayed; I recently observed my eighth anniversary at the Commission, and when I started, this matter even then had been pending for years). The *Ligado Order* is based on thorough technical analysis, evaluation of the test results, and information in the record. And we adopted our decision only after every commissioner had the full opportunity to review and consider it.

As you are probably aware, the Commission has received several petitions for reconsideration, including requests that we review our approach to evaluating interference concerns. The Commission also has received a petition that the Commission stay the *Ligado Order*. Let me assure you that we will give full consideration to the issues raised in compliance with the law and the Commission's rules.

I appreciate this opportunity to answer your questions related to the Commission's unanimous, bipartisan decision to continue promoting American leadership in 5G and to protect the important services enabled by GPS.

Sincerely,

Ajit V. Pai



OFFICE OF
THE CHAIRMAN

FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON

June 8, 2020

The Honorable Sheldon Whitehouse
United States Senate
530 Hart Senate Office Building
Washington, DC 20510

Dear Senator Whitehouse:

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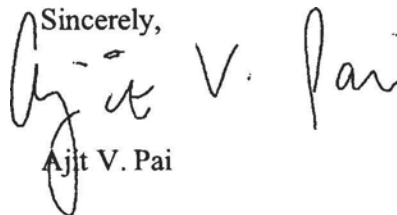
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