



FEDERAL COMMUNICATIONS COMMISSION  
WASHINGTON

OFFICE OF  
THE CHAIRMAN

October 3, 2016

The Honorable Fred Upton  
Chairman  
Committee on Energy and Commerce  
U.S. House of Representatives  
2125 Rayburn House Office Building  
Washington, D.C. 20515

Dear Chairman Upton:

Thank you for your letter regarding the Commission's Spectrum Frontiers proceeding and for your leadership on supporting next generation wireless deployment. I share your commitment to ensuring the United States maintains its global leadership in wireless broadband.

The Spectrum Frontiers *Report and Order* repeats the proven formula that made the United States the world leader in 4G: (1) make spectrum available quickly and in sufficient amounts; (2) encourage and protect innovation-driving competition; and (3) stay out of the way of market-driven, private sector technological development. Fifth generation, or 5G, wireless connectivity promises quantum leaps forward in three key areas: speeds resembling fiber that are at least 10 times and maybe 100-times faster than today's 4G LTE networks; responsiveness less than one-thousandth of a second, enabling real-time communication; and network capacity multiples of what is available today.

The rules unanimously adopted by the Commission in the Spectrum Frontiers *Report and Order* open up almost 11 GHz of spectrum for flexible use spectrum for wireless broadband, including 3.85 GHz of licensed spectrum and 7 GHz of spectrum for unlicensed use. In doing so, the Commission made more spectrum available for flexible use wireless broadband than ever before. With the adoption of these rules, the U.S. is now the first country in the world to open high-band spectrum for 5G networks and technologies, creating a runway for U.S. companies to launch the technologies that will harness 5G's fiber-fast capabilities. The *Report and Order* adopts a balanced approach and flexible framework that builds off of years of successful spectrum policies with important updates to address the new shared use challenges in the bands.

The rules also create effective sharing schemes to ensure that diverse users can co-exist, and that incumbents can be protected and expand. Sharing is essential for the future of spectrum utilization. Many of the high-frequency bands we are making available for 5G currently have some satellite users, or at least the possibility of future satellite users. Our rules strike a balance that offers flexibility for satellite users to expand, while providing terrestrial licensees with predictability about the areas in which satellite will locate.

We share your view that clear service rules are necessary to enabling investment and innovation in spectrum. That is why, in the *Report and Order*, the Commission adopted detailed

service rules in the spectrum it made available, including licensing, operating, and technical requirements. These rules will give prospective operators both flexibility and certainty regarding the rules of the road in these bands. The Commission's flexible approach to service rules has been extremely successful in encouraging rapid deployment in other spectrum bands, and by continuing and expanding on that tradition, the *Report and Order* ensures that we'll see the same results in millimeter-wave spectrum.

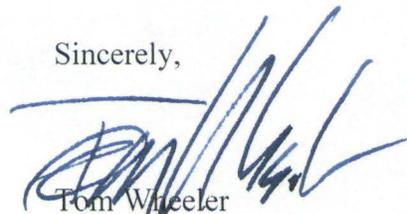
For the licensed spectrum it made available, the Commission mostly relied on traditional geographic-area licensing, as it has in many past proceedings such as AWS-3. At the same time, in order to address the future spectrum needs of both Federal and non-Federal users, the Commission adopted an innovative sharing framework in part of the 37 GHz band. This framework will allow Federal and non-Federal users to share on a coequal basis in part of the spectrum made available. Through the accompanying *Further Notice of Proposed Rulemaking (FNPRM)*, which proposes the use of additional dynamic, innovative sharing schemes in certain other millimeter-wave bands, we will continue to explore opportunities to leverage sharing tools to unlock even more spectrum in the future. The *FNPRM* proposes to make available an additional 18 GHz of spectrum, and it strongly signals the FCC's continued commitment to ensuring the U.S. leads in the next generation of wireless.

As you note, 5G networks must also be secure and cybersecurity issues need to be addressed during the design phase for the entire 5G ecosystem, including devices. The approach adopted in the *Report and Order* places the responsibility on industry to continue working to develop and communicate cybersecurity standards. We anticipate that a continuous dialogue between the FCC, industry, and standards bodies will stimulate industry development of a security framework for 5G and the Internet of Things that will evolve to accommodate new functions and security threats.

Finally, we share your opinion that the success of 5G will hinge upon the deployment of more densified wireless networks and are focused on promoting the common-sense siting policies that are essential for these new networks. We have successfully amended our nationwide programmatic agreement, which has streamlined the environmental and historic review process for many small cells. We have also tightened our 'shot clock' for siting application reviews. We will continue working to eliminate unnecessary infrastructure siting hurdles for small cells and to ensure that siting review fees and processes at the local level are fair and reasonable.

I appreciate your interest in this matter. Please let me know if I can be of any further assistance.

Sincerely,



Tom Wheeler



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October 3, 2016

The Honorable Frank Pallone  
Ranking Member  
Committee on Energy and Commerce  
U.S. House of Representatives  
2125 Rayburn House Office Building  
Washington, D.C. 20515

Dear Congressman Pallone:

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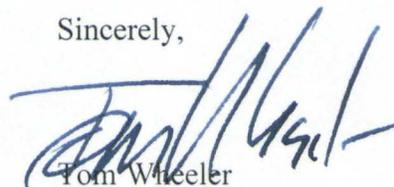
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