

**Remarks of FCC Commissioner Michael O’Rielly
Before 5G Americas’ “Technology Briefing”
October 5, 2017**

Thank you, Tricia, for that very kind introduction. It is a pleasure to address the members of 5G Americas and the attendees of today’s conference. For those who may not be aware, I have known Tricia since the mid-1990s. Now, I suspect you are thinking how can that be given our youthful appearances, but we were both child prodigies, or at least Tricia was. There are few people more passionate and knowledgeable about spectrum and international issues as Tricia. It’s what makes her an ideal advocate for 5G Americas, and I am honored to call her a friend.

Similarly, I have long admired this association’s focus on an issue that I hold dear – international spectrum harmonization. 5G Americas’ contributions before standards bodies and global organizations, such as the International Telecommunication Union (ITU), may go unnoticed by some, but I applaud your efforts. From spectrum to infrastructure, 5G Americas has a sometimes unique but always compelling and substantive perspective.

Global Harmonization & U.S. Leadership in Wireless Technologies

While some in this country may eschew global harmonization, and I understand that our market position means we have the option of going it alone or in coordination with a handful of other countries, offering commercial services on the same frequencies around the world has many benefits for U.S. consumers and providers. On the consumer side, there is the ability to use your devices and have the same wireless experience at home and abroad. At the same time, the economies of scale created by marketing products internationally enables research, development, and manufacturing costs to be widely dispersed, promoting investment and innovation while reducing the cost of devices and services for Americans. This should not be easily dismissed.

Additionally, the U.S. must also maintain its global leadership in wireless technology. To accomplish this, we must create the right environment for innovation, allowing our manufacturers and wireless providers to be the first to introduce new products and services. Also, we must participate in and be at the forefront of efforts to harmonize the bands and establish the standards for next-generation technologies. If standards properly reflect and include our industries’ amazing efforts, they promote U.S. technologies and companies abroad, bringing investment, revenues and jobs to this country. In fact, it is estimated that, globally, 5G will generate \$12.3 trillion in economic output and 22 million jobs by 2035.¹ Obviously, these economic benefits cannot be ignored and every country wants their slice of this tremendous pie.

The U.S. was, and still remains, the dominant player in the implementation of 4G LTE technologies. Other countries would like to duplicate our dominance and success as we approach the age of 5G. In fact, an industry executive recently stated that the U.S. is ahead in the early stages of 5G because of the efforts of the U.S. industry and the positive actions of the FCC to allocate spectrum. While Europe, for instance, was previously far behind, their operators have since stepped up to some degree and accelerated their 5G work, but their regulators are still falling behind due to a lack of coherent spectrum

¹ HIS Economics/HIS Technology, *The 5G Economy: How 5G Technology will Contribute to the Global Economy* (January 2017), <https://www.ihs.com/Info/0117/5g-technology-global-economy.html> (stating that these predictions are expected in 2035).

policy.² So, there is an all-out sprint in the regulatory space as well. Consequently, the FCC must continue to lead on policies that facilitate 5G development and deployment.

Spectrum Policy

When it comes to spectrum allocation, the U.S. was the first country to dedicate frequencies specifically for 5G networks. The Commission recently completed the first-ever broadcast incentive auction. And, we allocated, in a unanimous and bipartisan fashion, millimeter wave frequencies back in July 2016 for licensed and unlicensed use, and identified future bands for consideration. I am so pleased that Chairman Pai recently announced that there will be a follow up Spectrum Frontiers item by year's end, which will respond to issues raised in the further notice and on reconsideration and act on additional bands so that we extend the spectrum pipeline. To complement this, the Commission needs to identify and publish a schedule to auction these respective bands so that all potential participants have advance notice and time to prepare. The AIRWAVES Act, a bipartisan bill recently introduced in the U.S. Senate, recognizes the importance of completing these auctions in a timely fashion.

Notwithstanding the fact that there is no true definition of 5G, most believe that next generation systems will capitalize on both new and existing, licensed and unlicensed networks, utilizing low-, mid- and high-band spectrum. Clearly, we have made good process, but more work needs to be done to provide mid-band spectrum for next generation technologies. Admittedly, the lines are a bit blurred regarding where the mid bands start and end these days. Let me take a few moments to discuss some centrally located frequencies that I consider to be in the mid-band range.

3.5 GHz Band

As you may know, on Tuesday, the Commission posted the draft of the 3.5 GHz Notice of Proposed Rulemaking (NPRM) for consideration at this month's meeting. This step officially commences a proceeding to review the priority access licenses, or PALs, and some other select technical issues. Since the Commission initially voted the item back in 2015, I have consistently heard concerns from a variety of parties that the PALs structure was not suitable to ensure investment and needed serious improvement.

In undertaking a review of our rules at the request of the Chairman, I have met with many interested parties about their ideas and read the comments in response to the petitions filed by CTIA and T-Mobile. As this item is currently before the Commission, my ability to comment at length at is limited, but many of these views are reflected in the draft NPRM. For instance, although many entities are willing to explore unlicensed-style GAA use, more extensive builds, such as those necessary for broad scale 5G deployments, may require greater certainty to ensure that investment would not be stranded. To provide such an environment, many commenters appropriately requested longer license terms, larger geographic areas, and renewability.

I will take this opportunity to repeat what I have said before – I have no intention of disrupting GAA or negating the work done on the various databases. I just want all three tiers of this so-called experiment to be able to work, which they do not today. And, one other thing, some have been alleging that the goal of this proceeding is to turn 3.5 GHz into a 5G band. I want to make it clear that I believe in flexible

² Interview with Hossein Moiin, Chief Technology Officer, Nokia Networks, Sept. 25, 2017, <https://www.mobileworldlive.com/videos/interviews/interview-nokia-3/>.

use policies. The FCC should make this spectrum available in a manner that is attractive to as many use cases as possible, and that includes 5G.

3.7 to 4.2 GHz Band

The Commission is also seeking to expand 5G to other mid-band frequencies. While our recent Notice of Inquiry teed-up a discussion of any bands of interest between 3.7 and 24 GHz, I look forward to hearing about the possibilities of the 3.7 to 4.2 band.

The first round of comments was filed just this week. Overall, commenters have highlighted the importance of the 3.7 to 4.2 GHz, because the U.S. is at a disadvantage to other countries when it comes to licensed spectrum below 5 GHz. Many commenters seem to agree that it is possible to share with incumbents or even repack or clear the band for flexible use, including mobile services. Another group of entities has proposed a plan that would favor fixed operations in the band, but this is counter to flexible use policies and is not appropriate.

I suggest that the Commission should start by ensuring that updated and complete information about incumbent operations is in the FCC databases. This is the only means for the Commission to truly evaluate current use and protection mechanisms, to the extent they are needed.

3.4 GHz Band

The U.S. should look at opening up the 3100 to 3550 MHz band, as discussed in the MOBILE NOW bill, which passed the U.S. Senate in early August. In particular, we should examine closely the portion of this band closest to 3550 MHz, namely the 3.4 GHz range, as this is directly adjacent to the previously discussed 3.5 GHz band. Now, I fully understand that the NTIA and the Department of Defense are hard at work on other bands and that this band is used extensively by the military. But, we should start studying these frequencies now to figure out what steps can be taken to determine whether some or all could be cleared for licensed use. If this spectrum cannot be cleared, then we can also look at sharing mechanisms. It was exactly this sort of approach that led to the highly successful AWS-1 and AWS-3 auction, and we should collectively draw on that experience to achieve similar results here.

International Spectrum Efforts

Switching topics slightly, going forward the FCC and our wireless industry must be more involved at the ITU to ensure that our spectrum policy objectives are successful. We learned a valuable lesson at the World Radiocommunication Conference (WRC) in 2015 that we cannot underestimate the potential resistance as new bands are sought for future wireless networks. From blocking studies regarding mobile use in 28 GHz to allowing member states to veto neighboring countries from allocating 600 MHz for mobile use, these are unfortunate, procedural flaws that should not be allowed to happen.

For this reason, I have been active in the early preparations for this every-four-year event. My interest, and why I am willing to leave my lovely family to attend these conferences, results from the great need to advocate in favor of U.S. spectrum positions. Moreover, I am unwilling to cede the international ground to other nations that neither share our economic views nor believe in individual liberty.

These experiences have reaffirmed my belief that the ITU needs a fundamental overhaul. Clearly, greater transparency and process reform are long overdue. But it's more than that: the ITU is currently

being used by authoritarian governments to push their myopic agendas to the detriment of other countries, including America, and technology advancement. Structural reforms need to be enacted to ensure that the ITU remains technology neutral and focused on its core mission as opposed to engaging in mission creep, such as their activities to regulate the Internet. Failure to proceed along this path is likely to lead to calls for the U.S. to defund the ITU in whole or in part, which would likely fracture the organization and lead to its functional demise. No freedom minded individual should want this outcome because, if we are at least part of the organization, we have the chance to fight for the hearts and minds of the world community. A withdrawal strategy will lead to greater spectrum chaos and a loss of the global efficiencies and benefits I previously discussed.

If the U.S. remains involved, I suggest that we demand a larger role and say in the ITU leadership. It is ironic that we are the second largest contributor of funds to the ITU, but only one Secretary General has come from the U.S. in 150 years and the last American sector head was approximately 25 years ago. People from the U.S. should be within the upper echelons of ITU leadership.

Wireless Infrastructure Installation & Deployment

Regardless of our spectrum efforts and the international spectrum fights, 5G simply will not come to fruition domestically if the requisite small cell networks are not in place to deliver services. By all accounts, this will be a timely and capital-intensive undertaking, and state, local and tribal governments must stop placing barriers in front of infrastructure installation and deployment. While some are acting in good faith, others are clearly pursuing misguided agendas and using the opportunity to extract improper fees.

For example, providers seeking permitting approvals are still experiencing excessive delays and even flat out moratoria. One company reports that in Florida alone there are 26 jurisdictions that have installed moratoria, most for more than 180 days, but in the case of at least two localities, over two years.³ Permitting applications are being rejected for indefensible reasons, such as aesthetics, radiofrequency concerns, or because localities don't agree with the proposed type or placement of equipment. A case in point is Minneapolis's code allowing it to require that the base stations be underground, which just doesn't work for wireless systems.⁴ Localities should not be making such decisions, and, in fact, they are expressly prohibited, under the law, from basing decisions on RF exposure.

Finally, providers are being forced to pay astronomical fees for approvals, which is unsustainable when thousands of small cells, generally the size of bread boxes, will need to be deployed. Providers report that they are paying not only large one-time application fees, but also franchise, use, and contractor fees. Many report having to pay annual fees, with some based on gross revenues. For instance, one jurisdiction, charges \$6000 per wireless antenna per year.⁵ Outrageous. Thankfully, the Commission has three open proceedings about facilitating infrastructure installations and the Chairman has also instituted the Broadband Deployment Advisory Committee to examine and resolve these type issues. At the end of the day, the Commission must be willing to preempt such harmful activities.

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³ Letter from Cathleen A. Massey, Vice President, Federal Regulatory Affairs, T-Mobile, to Marlene H. Dortch, Secretary, Federal Communications Commission, WT Docket No. 17-79 (Sept. 21, 2017).

⁴ *Id.*

⁵ *Id.*

Thank you for listening to my thoughts about 5G and how the U.S. will remain the leader in wireless technologies. I would be pleased to take questions.