

**Remarks of FCC Commissioner Michael O’Rielly
Before the 8TH Annual Americas Spectrum Management Conference
September 24, 2019**

Thank you, Rob, for that kind introduction and to Forum Global for inviting me to join you today.

I started preparing for this event by refreshing my memory about what topics I covered at the last two Annual Americas Spectrum Management Conferences. I have touched upon all the millimeter wave frequencies and the importance of tuning ranges. I have discussed the need for mid-band spectrum, such as 3.5 GHz and the necessary changes to the priority access license, or PAL, structure, along with the surrounding bands and others. So, this year, I am ...errr...ummm...going to cover much of the same ground and hope everyone enjoys it as much as they did before. Maybe there is some virtue in being so laser-focused. Steven Covey, author of the book *The 7 Habits of Highly Effective People*, once wrote, “The main thing is keeping the main thing the main thing.” Certainly, getting future spectrum policy right is a main thing, at least in our lines of work.

Despite all of my repetition of these issues, I am very pleased to offer some views in preparation for “Session 4: A focus on . . . the key mid-band spectrum.” The associated panels are certainly some of my favorite topics, so I thought I would provide an update on some of those bands and then turn to preparations for this year’s World Radiocommunication Conference (WRC).

Mid-Band Update

Those of you who know me – and I see many friendly faces – know that I have a tendency to go deep into the weeds on spectrum policy or, as the youngsters may say, “geek out” on the topic. So, with that understanding, let’s delve into the mid bands, which have been my top priority over the last several years when it comes to reallocating spectrum in the U.S. for new wireless services.

I believe the mid bands will effectively serve as catalyst for future wireless services, especially 5G. While high bands have the capacity and low bands have the coverage, mid bands provide the combination that is needed to realistically deliver the promise of 5G speeds, capacity, and low latency to a large number of Americans, especially those not living in our large cities. The difficulty is that past allocations in the U.S. provide few bands that can be reallocated in the relatively short term. I will talk about four. If done quickly and correctly, these bands can dramatically change the overall inventory of mid-band spectrum within the U.S. to rival our foreign counterparts.

C-Band

By far, the easiest and most appropriate band identified for such reallocation is the C-band. The 500 megahertz between 3.7 and 4.2 GHz, which is mainly used today for satellite-delivery of video and audio programming, has sellers who are willing to transition a good portion of it – approximately 300 megahertz – to wireless service providers. That is, the current global satellite providers are prepared to shrink their spectrum footprint, while accommodating their existing contracts, in exchange for proceeds from the sale. It helps that the band is completely free from federal government users, although there will likely be a sizeable guard band at the top to protect the aviation altimeter service, meaning that the entire band is unlikely to be attainable for wireless in the near future.

The fortuitous circumstance of our domestic C-Band reallocation effort is that it lines up incredibly well with international efforts to allocate 5G spectrum. Specifically, major countries and regions of the world, including South Korea, Japan, China, the UK, and many of the remaining European Union nations (that's a Brexit joke!) have already assigned, are in the process of assigning, or soon will assign licenses to use these – or nearby – frequencies for next generation wireless services. Some of you are integrally involved in those efforts. And, most of us recognize the enormous benefits of harmonizing this particular spectrum band globally, especially in terms of lower costs and reduced time for equipment manufacturers to get to market. Consumers also will reap great benefits from reduced equipment costs, speed of new services, and accessibility to the same services abroad, just to name a few.

After championing this issue for over three years, I am so pleased to report that the FCC is near completion of its review process and is finalizing details for its reallocation, which should come later this fall. Chairman Pai likely articulated the same message this morning. To be clear, this doesn't suggest there won't be some controversy or last minute details to sort out, but it will mainly involve squabbling over the specifics rather than any fundamental disagreement regarding the premise. Generally, everyone agrees now that this spectrum must be reallocated and rebanded.

Most of the criticism of what is known as the CBA Proposal shows a lack of understating of how the internal Commission works. For instance, the argument has been made that the FCC should conduct a public auction for these frequencies rather than allowing the private sector to do it. Please don't anyone try to lecture me on the Commission's supposed efficiency and timeliness in conducting auctions, as I have experienced the latter firsthand for the past six years and twenty more from a different perch. This is not a new problem by any stretch of the imagination. Given what is already in the pipeline and how long it takes for the Commission to set up and operate an auction, we are talking years – and I mean years – before completion. We can certainly ensure transparency, accountability, fairness, and openness without having to run the auction ourselves.

Moreover, the argument has been made that it is unfair for these private, foreign satellite companies to receive all of the proceeds from any spectrum auction, private or public. In the end, my primary concern is getting the C-band reallocation done as expeditiously and thoughtfully as possible so it can advance the U.S. 5G efforts. If someone or some entities make a profit for being in the right place at the right time, I will live with that outcome. In the grand scheme of things, if it is a contest between speed and the government trying to extract a significant piece of the transaction through a lengthy process, I'll take the speedy resolution.

6 GHz

The Commission is also actively pursuing allowing unlicensed wireless services in the 6 GHz band, which serves as the corresponding C-Band uplink. This is a prime location for unlicensed spectrum because it can be combined with the 5 GHz and 5.9 GHz bands to provide the large spectrum channels needed to achieve 5G-like results. Opening this band to additional uses is doable as long as the incumbent protections are reasonable, but this is an example where clearing may not be feasible.

Some entities are interested in this band for licensed use, but if we address other license spectrum needs, such as 3.7-4.2 GHz and perhaps 7.125 to 8.5 GHz band, that would relieve significant pressure. Accordingly, it would be wise to start studying the 7 GHz band to see if it can accommodate commercial operations. And, I understand that new legislation will be introduced by Congressmen Doyle and Latta to do just that. Additionally, efforts should be made to allow low-power indoor use, across the entire

band, without the intervention of an automatic frequency coordinator, which would otherwise add expense for those wishing to use the band for devices like in-home wireless routers.

3.5 GHz

The U.S.'s greatest success so far has been reallocating the spectrum located between 3.55 and 3.7 GHz, also known in FCC nomenclature as the Citizens Broadband Radio Service, or CBRS. In fact, we have good news to report for those in the international community regarding its progress: Just last week, the Commission approved the final pieces to allow unlicensed-like commercial operations. Additionally, the Commission will vote on an item later this week that will set an auction date of mid-next year for the awarding of licenses. These developments should provide lively and ripe material for your next panel session.

Substantively, the end result of our efforts will be that the originally envisioned three-tier structure of federal government incumbents, licensed users, and unlicensed-like operators all operating in the same frequencies will finally be coming to fruition. It's the first time we are trying dynamic spectrum assignment on such a large scale, and we have very high hopes that it can be used in future situations where clearing spectrum is exorbitantly costly and not a practical option.

With the initial commercial deployments operational, the communications sector will be able to gain critical data, experience, and a greater level of comfort regarding this overall approach. I am confident that this will allow the Commission to revisit some prior decisions regarding power limits, exclusion zones, and technical requirements, in order to expand the reach and functionality of those commercial entities in the band. While some doubted that this would be a 5G band, many industry proponents rightfully pushed to accommodate and promote acceptance of 5G, and now we are within mere months of seeing 5G compatible standards for this band. The only remaining large action item is getting priority access licenses, or PALs, into the hands of those that most want them.

3.45 to 3.55 GHz/3.1 to 3.45 GHz

Last on my list of U.S. spectrum bands that should be made available is 3.45 to 3.55 GHz. This is the one hundred megahertz located just below the CBRS band, and its proximity to CBRS and C-band make it an appropriate candidate for reallocation. Further, it is not heavily used by the government and current operations may be able to be relocated without enormous costs or effort.

Unfortunately, after initially signaling that it would cede the frequencies to commercial purposes, the U.S. Department of Defense (DoD) effectively changed its mind. Instead, we now have a situation in which this very viable spectrum is being studied for sharing between the private sector and DoD. For comparison purposes, it's like the case of an absentee squatter who built a run-down shack located on property designated for renovation. First, they agree to abandon the property and then later refuse to leave once they realize the newfound value of the neglected property, arguing instead that everyone should share the land and just build around them.

Importantly, this spectrum is part of a larger band that has been identified numerous times by Congress as a prime target for commercial wireless services. While studies are unnecessary for the upper 100 megahertz, it is eminently sensible to study the lower portion of the band, which starts at 3.1 GHz. Current law orders NTIA to develop a report on the feasibility of sharing these bands, but recent activity suggests NTIA will only consider the lower portion of the band after the report is due in March 2020.

Basically, we shouldn't expect any substantive work on 3.1 to 3.45 GHz prior to the preparation of the report, which, amazingly, appears to be the opposite of what Congress had in mind.

While this seems like a domestic dispute, it epitomizes how difficult it can be to clear spectrum bands, even those where it should not be. I'm sure some of you can sympathize with our situation. That leaves the band at somewhat of a crossroads, but I think there is an opportunity to clear this up with a bit of leadership and persuasion.

World Radiocommunication Conference

What is even more problematic is that some spectrum issues, which really are just further domestic squabbles, are also being litigated and relitigated in international venues, as the U.S. prepares for the quadrennial WRC. At past WRCs, the U.S. has struggled against some actors in the international community who do not necessarily share our forward-looking approach to spectrum policy, and this will no doubt continue. But during this cycle, some U.S. federal agencies seem intent on using this conference to undermine Commission and Administration decisions. As someone who attended WRC-15, it is our obligation to support the U.S. and our region's proposals.

For instance, in the recent months, there has been much press attention about the 24 GHz band. In short, the Commission adopted rules back in 2017, which were coordinated with and approved by other federal agencies through normal processes that allow for comprehensive input from all, and then auctioned the band this year. A few weeks prior to the auction, some federal agencies, in the context of WRC preparations, went back on their word and sought greater technical protections for the adjacent passive bands, which contain water-vapor sensors for weather prediction. These unnecessary protections, which would have made the auctioned spectrum useless, were based on worst-case scenarios, unrealistic deployment models, and somehow ignored the 250-megahertz guard band between the commercial and passive bands, among other problems. To clarify, the protections adopted by the Commission are the same as those used to protect existing government operations located directly below the passive bands without a single instance of reported interference.

Regardless of this backhanded approach, the Commission nonetheless was able to find an acceptable compromise with these federal agencies and agreed to a more stringent protection metric at the Americas regional conference, known as CITEL. Despite this settled agreement, it appears that some are still trying to revisit this issue. Of course, I think the technical rules adopted by the Commission will fully protect the passive bands and should have been the basis for our advocacy abroad. However, I accept the fate that negotiations are over, and a compromise position was put forth by the requisite Administration leaders. Now, we must do our best to ensure that the compromise protection criteria are successfully adopted in WRC-19 without further changes. Failure to do so puts the ability to offer 5G services in the entire band at risk. More importantly, we also must ensure that unreasonable protections are not used to harm our efforts on other bands, such as the 37 to 39 GHz band, which is part of a tuning range that extends to 43.5 GHz, and 50 GHz, both of which are also near other passive services.

Attempts have also been made to delay commercial wireless allocations in the vital mid bands. Right now, the Americas region is supporting the study of spectrum from 3.3 GHz to 15.35 GHz, with specific bands to be determined later. However, it does not include bands the FCC was seeking, such as the previously mentioned 3.1 to 3.3 GHz, which were blocked by the very federal agencies that are supposed to be studying them.

In the high-speed world of wireless innovation, the WRC process works at a snail's pace. A band that does not make the cut at one WRC has a four-year wait before it can be reconsidered. So, if a federal agency stops a study from moving forward, the chance for global harmonization is significantly delayed, because, while the possibility of a study can be brought up four years later, any final action to harmonize the band will not happen for a further four years after that. Therefore, if 3.1 to 3.3 GHz is not included in the future agenda item at WRC-19, harmonization would not take effect until 2027 at the earliest. Is this really the desired outcome we should be pursuing?

On the flip side, studies cannot and should not be used for dilatory or anticompetitive reasons. Countries looking to catch up or that are pushing different technologies can use the study process to delay U.S. innovation in order to gain a competitive edge. Additionally, once a band is open for discussion, other nations may seek technical restrictions to protect favored industries that inhibit the service the U.S. is hoping to deploy. This seems to be what is happening with the 6 GHz band. Currently, 6 GHz has a mobile allocation internationally, but some are seeking an IMT designation, which is ITU-speak for an exclusive-use model. The mobile designation, however, allows each country the flexibility to opt for licensed, unlicensed or a combination of both. Many countries do not have the vibrant unlicensed community that the U.S. enjoys. By unnecessarily putting this band in front of the ITU for study for IMT, it could delay U.S. efforts in the band, lead to diminished investment, tilt the scales towards licensed use, and result in unnecessary and unworkable technical restrictions being placed on the band. In fact, the last time the ITU looked at the band, it sought to limit deployments to low-power indoor use, which is inconsistent with the direction the Commission is taking.

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Before I make any further missteps, get myself into further trouble, or bore you completely, I will stop and let the esteemed panelists take it from here. Thank you for listening and enjoy the rest of the conference.