

**STATEMENT OF
COMMISSIONER JESSICA ROSENWORCEL**

Re: *Use of Spectrum Bands Above 24 GHz for Mobile Radio Services, GN Docket No. 14- 177; Establishing a More Flexible Framework to Facilitate Satellite Operations in the 27.5-28.35 GHz and 37.5-40 GHz Bands, IB Docket No. 15-256; Petition for Rulemaking of the Fixed Wireless Communications Coalition to Create Service Rules for the 42-43.5 GHz Band, RM-11664; Amendment of Parts 1, 22, 24, 27, 74, 80, 90, 95, and 101 to Establish Uniform License Renewal, Discontinuance of Operation, and Geographic Partitioning and Spectrum Disaggregation Rules and Policies for Certain Wireless Radio Services, WT Docket No. 10-112; Allocation and Designation of Spectrum for Fixed-Satellite Services in the 37.5-38.5 GHz, 40.5-41.5 GHz and 48.2-50.2 GHz Frequency Bands; Allocation of Spectrum to Upgrade Fixed and Mobile Allocations in the 40.5-42.5 GHz Frequency Band; Allocation of Spectrum in the 46.9-47.0 GHz Frequency Band for Wireless Services; and Allocation of Spectrum in the 37.0-38.0 GHz and 40.0-40.5 GHz for Government Operations, IB Docket No. 97-95*

Our mobile economy is growing—fast. We are moving from networks designed for analog voice to networks designed for high-speed digital data. Add to this the emerging possibilities for viewing ultra-HD videos on tablets and televisions. Then consider self-driving cars and the Internet of Things are around the bend, featuring billions of machines with sensors relying on a steady stream of data delivered wirelessly. Stand back, and you can see that the demands on our airwaves are growing at a breathtaking pace with no end in sight.

To meet these future demands, we need to think differently about spectrum and wireless infrastructure. Today, the bulk of our 4G wireless networks are built on spectrum frequencies from 600 MHz to 3 GHz. This is our current sweet spot for mobile communications.

But the 5G future will look different—very different. Instead of sticking to this limited spectrum range, we are looking up—to infinity and beyond. We are going to bust through our old 3 GHz ceiling and create new possibilities for millimeter wave spectrum, or airwaves that are way, way up there. Of course, at these stratospheric frequencies there are propagation challenges. While these super-high signals carry a significant amount of data, they do not go far. But we can turn this limitation into a strength by combining these frequencies with small cells packed close together, densifying our networks at lower cost. This, in turn, can mean service that reaches further into buildings at faster speeds than ever before. This is especially useful in urban corridors and fast-growing areas with the greatest traffic demands.

I am excited about this rulemaking—and it comes at the right time. Because efforts to develop the next generation of wireless technology are already underway around the world. South Korea and Japan have plans to deploy 5G services by the time they hold the Olympics in 2018 and 2020, respectively. Last year, the European Commission committed to support 5G research with South Korea and this past May signed up for the same with Japan. Only a few weeks ago it reached an agreement with China, where three of the nation's ministries have jointly established a group to promote the development of 5G technologies. In short, the race to 5G is on.

With the race on, today's rulemaking gets us out of the gate. We propose to authorize mobile operations in the 28 GHz, 37 GHz, and 39 GHz bands. We also propose to authorize unlicensed operations in the 64-71 GHz band. This last effort is especially exciting, because it may move us from a world of Wi-Fi to Wi-Gig. With respect to the other bands we propose creative licensing and technical rules and take into consideration the need to protect incumbent federal operations and existing satellite

interests. We also seek comment on additional airwaves to develop a further record to support new bands as the technology for millimeter wave spectrum advances.

Next month, we will present the ideas we adopt today to the rest of the world at the World Radio Conference. This year's conference is especially important because we have an opportunity to help decide what spectrum bands are studied for 5G. The opportunities for international harmonization are real—and with it they bring the potential for scale economies that will lower the cost of equipment and deployment. This, in turn, will speed the availability of 5G services both on our shores and worldwide. This is important—and the pressure is on.

Going forward, I think it is also important to update our policies for small cells. To win this race, we are going to need to incorporate these antennas into the designs of essential infrastructure through new building models, retrofitting practices, and certification standards. This is a discussion that is far broader than this Commission—but is absolutely necessary for the possibilities of millimeter wave spectrum to really take flight.

It's worth the effort. Because if we get our 5G spectrum policies right, we will take our success in 4G and propel ourselves forward to lead the world in the next generation of wireless technology. I look forward to making it happen.