

FierceWirelessTech

January 14, 2015

NYU Wireless says U.S. falling behind in 5G, presses FCC to act now on mmWave spectrum

By Monica Allevan

Cosmetics giant Revlon is joining the corporate march from Midtown to downtown, having signed a deal for 91,194 square feet for the top two floors of One New York Plaza, where it will have 360-degree harbor views.

While other parts of the world are making strides in 5G research and development, the United States should look to millimeter wave (mmWave) technology to make sure it is not left behind--and it's got to act fast.

That's the summation of a more than 50-page filing that NYU Wireless submitted to the FCC. The FCC's initial comment period on the feasibility of using high-frequency radio waves in the millimeter-wave spectrum closes Jan. 15.

Ted Rappaport, the NYU Wireless professor and industry pioneer leading the efforts, told FierceWirelessTech that an aggressive spectrum policy is a great equalizer at the FCC's disposal. "I think we have to do something very big and very bold to give our citizens access to the technologies that are being developed around the world and to make our markets available so the technologies around the world come to us," he said.

"Unleash the spectrum. It'll make money," including for the government, he said. "Auction off 10 GHz of spectrum in the millimeter wave band," and use some of the auction funds to pay for basic R&D for the future of the wireless industry, he suggested. "At the same time, create a technical playground, make available 5 to 10 GHz more spectrum," for the creation of new technologies.

NYU Wireless isn't asking for the government to provide funding for 5G, although it does point out that Japan's Ministry of Internal Affairs and Communications (MIC), like many of the FCC's overseas counterparts, not only acts as a regulator but also is involved in supporting communications R&D, where it is "picking winners and losers." While it's not

M.

U.S. policy to provide funding, the FCC can help spur investment by providing a clear understanding of when more spectrum will be available for millimeter wave deployments. In the FCC filing, NYU Wireless says: "We believe that in the global race to 5G, the U.S. is falling behind other nations in R&D aimed at the mainstream wireless technology sector. Timely action by the FCC to make the mmWave spectrum available for commercial use, without prolonged regulatory uncertainty, will stimulate private capital formation for American product development that will result in new services and capabilities for consumers."

Major 5G researchers in the U.S. include Qualcomm, Intel, Silicon Image, National Instruments and Keysight Technologies, the filing points out. But data from the Organization for Economic Cooperation and Development (OECD) on information and communications technologies (ICT) show basic R&D expenditures are a fraction of gross domestic product (GDP), and the filing includes data showing the U.S. at No. 6 among OECD members, below Finland, Israel, Korea, Sweden and Japan. Taiwan and China are not OECD members, so they are not included but are active in ICT research.

Indeed, Chinese vendor Huawei revealed plans late last year to conduct a 5G trial during the FIFA World Cup in 2018 with Russian operator MegaFon, two years ahead of the time many industry experts expect to see commercial 5G. South Korea has pledged to work with the international community, while 5G momentum accelerated in Europe last year.

In its filing, NYU Wireless encouraged the FCC to "consider a future where CMRS carriers are not just a few nationwide carriers competing in particular markets, but where there is sufficient allocated bandwidth that many smaller entrants would be allowed to operate and thrive in particular geographic areas, or where carriers of different types could share or allocate wideband resources to meet different types of customers using the same spectrum license."

The group is advocating for the use of flexible, permissive licensing with minimal restrictions on incumbent spectrum holders, so they can rapidly and aggressively work with other constituents on new services and business models. It's urging the FCC to auction off 5-10 GHz of new mmWave spectrum below 100 GHz, while also providing 5-10 GHz of unlicensed spectrum, including spectrum above 100 GHz, to spur economic development and new technological innovations.

"There are fiber optic links all around, but getting it to where it's needed always has been a problem for cellular and other communications," Rapport told FierceWirelessTech. "You open up spectrum like this, you immediately create a wireless fiber kind of possibility, and if it's licensed right in each little metropolitan service area... you'll immediately create

M.

what LMDS was supposed to do 20 years ago, but at the same time allow mobility and Wi-Fi.”

In a white paper it released last year on 5G in North America, 4G Americas included a section on millimeter wave technology, saying future networks must have the ability to use the entire range of spectrum ranging from below 1 GHz up to 6 GHz “and then well into the millimeter wave ranges efficiently and seamlessly.”

For more:

- see this FCC filing