

March 24, 2015

VIA ELECTRONIC FILING

Ms. Marlene H. Dortch, Secretary
Federal Communications Commission
445 Twelfth Street, SW
Washington, DC 20554

Re: Ex Parte Presentation

Amendment of the Commission's Rules with Regard to Commercial Operations in the 3550-3650 MHz Band, WT Docket No. 12-354

Dear Ms. Dortch:

On Friday, March 20, 2015, representatives of CTIA – The Wireless Association® and member companies (the “wireless industry representatives”) met with members of the Wireless Telecommunications Bureau and the Office of Engineering and Technology to discuss the above-referenced proceeding.¹ In particular, the wireless industry representatives addressed recent filings by Google, the National Cable & Telecommunications Association (“NCTA”), Federated Wireless, and the Open Technology Institute/Public Knowledge (“OTI/PK”) asking the FCC to effectively bar an innovative new technology – Long Term Evolution – Unlicensed (“LTE-U”) – from the 3.5 GHz band.² The wireless industry representatives urged the FCC to reject their request and, instead, adopt rules that (1) do not favor one technology over another; (2) support devices being tunable across the 3.5 GHz band; (3) incent investment by Priority Access Licenses (“PALs”) users; and (4) foster a robust, competitive SAS framework.

3.5 GHz rules should be technologically neutral. The wireless industry representatives explained that the FCC should refrain from picking technologies and instead adopt technical rules *independent* of the type of air technology interface. But Google, NCTA, Federated, and OTI/PK argue otherwise, calling on the FCC to prohibit LTE-U in the 3.5 GHz band simply because it relies on a control channel in licensed spectrum. The FCC should reject these arguments.

First, as the FCC has acknowledged, it is not the agency’s role to make technology choices.³ Here, the FCC has proposed technology-neutral rules that establish a framework

¹ The list of the attendees is attached. Courtesy copies are being provided by email to each FCC attendee.

² See Letter from Aparna Sridhar, Google, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 12-354, at 9 (Mar. 3, 2015) (“Google Letter”); Letter from Rick Chessen, National Cable & Telecommunications Association, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 12-354, at 2 (Feb. 27, 2015) (“NCTA Letter”); Letter from Kurt Schauback, Federated Wireless, Inc., to Marlene H. Dortch, Secretary, FCC, GN Docket No. 12-354, at 7-10 (Mar. 4, 2015) (“Federated Letter”); Letter from Michael Calabrese, Open Technology Institute, and Harold Feld, Public Knowledge, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 12-354, at 3-5 (Mar. 16, 2015) (“OTI/PK Letter”).

³ See, e.g., *Deployment of Wireline Services Offering Advanced Telecommunications Capability*, Memorandum Opinion and Order and Notice of Proposed Rulemaking, 13 FCC Red 24011, 24014 ¶ 2 (1998) (“The role of the

for allowing different technologies to work together.⁴ These rules are not tied to the type of air interface and use case for air interface. LTE-U is a promising new technology and one possible solution that does not preclude other air interface solutions that meet the FCC's technical requirements.⁵ LTE-U is designed to be a good neighbor and co-exist harmoniously with Wi-Fi, far from creating a danger of "significant interference,"⁶ "lock[ing] up" the 3.5 GHz band,⁷ or raising "barriers to entry."⁸

Second, there is no basis to claim that bonded channels should be prohibited. The initial versions of LTE-U will have a licensed component, but this is no cause to bar the deployment of an efficient technology. As noted, LTE-U contains features that ensure other technologies, like Wi-Fi, can operate in the same band harmoniously. Given these circumstances, there is no merit to Google's argument that current LTE-U should not be permitted in the 3.5 GHz band and only stand-alone technologies should be allowed.⁹ Such a proposal is not technologically neutral, and would only serve to bar an innovative technology from use by wireless consumers.

Tunability across the 3.5 GHz band is important. The wireless industry representatives affirmed support for ensuring that Citizens Broadband Radio Service Devices ("CBSDs") are tunable throughout the 3.5 GHz band. This operability will foster economies of scale as the equipment market for PAL and General Authorized Access ("GAA") devices develop. The FCC should not, however, mandate tunability across Bands 42 (3400-3600 MHz) and 43 (3600-3800 MHz),¹⁰ which do not align with the 3.5 GHz band. The wireless industry representatives understand that standards bodies will develop a Band specific to the 3.5 GHz frequencies. Any mandate extending beyond the 3.5 GHz U.S. allocation to include the non-overlapping portions of Bands 42 and 43 is outside the scope of this proceeding.

Commission is not to pick winners or losers, or select the 'best' technology to meet consumer demand, but rather to ensure that the marketplace is conducive to investment, innovation, and meeting the needs of consumers."); *Deployment of Advanced Telecommunications Capability to All Americans*, Report, 14 FCC Rcd 2398, 2401-02 ¶ 5 (1999) (same); *Service Rules in the Government Transfer Bands*, Report and Order, 17 FCC Rcd 9980, 10030-31 ¶ 123 (2002) ("[W]e prefer to take a technology-neutral approach that will allow licensees to implement a broad range of services and technologies. Thus we do not believe that the public interest would be served if we were to adopt technical requirements that would tend to favor one technology over another.").

⁴ See 47 C.F.R. § 96.38 (proposed).

⁵ LTE-U permits unlicensed spectrum to be bonded via a control channel to licensed spectrum to enhance capacity while providing highly reliable service. Its benefits include higher peak and average data speeds to smartphones and mobile broadband devices; reduced packet latencies; bringing LTE efficiencies (like quality of service controls and robustness) to unlicensed bands; and complementing Wi-Fi access points while providing far greater coverage performance. See Letter from Steve Sharkey, T-Mobile, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 12-354, Att. at 6 (Mar. 13, 2015).

⁶ OTI/PK Letter at 3.

⁷ Federated Letter at 7; see OTI/PK Letter at 5.

⁸ NCTA Letter at 1-2; Federated Letter at 7-8.

⁹ See Google Letter at 9.

¹⁰ See *id.*

PALs licensing rules should drive investment. The wireless industry representatives emphasized their continued opposition to dynamic, opportunistic GAA use of PALs,¹¹ urging that PALs licensees have unfettered access to their licensed spectrum once they announce their use of it. In order for operators to invest in a band, certainty and transparency are crucial. In contrast, the concept of opportunistic fast-scheduling by a Spectrum Access System (“SAS”) is untenable, as PALs licensees would need to wait too long to re-acquire reserved licensed spectrum after a GAA user has decided to use a “blank” channel. Any such approach would eliminate the benefits of obtaining a PAL channel rather than a GAA channel.

The FCC should also adopt static frequency assignment of PALs,¹² which are critical to enable HetNet functionality and support reliable coverage. Specific channel assignments help network operators manage their networks and interference, which is extremely challenging in a dynamic sharing environment. Operators can manage neighboring frequencies and parameters associated with handoff, reselection, and optimization of various hierarchical layers of the network – and use spectrum most efficiently – if they hold common frequency assignments across their service areas. Static frequency assignments also enable adjacent cell coverage areas to perform hand-over, collaborative cell synchronization, collaborative interference management, and other advanced radio techniques.

A robust, competitive SAS framework is needed. The wireless industry representatives indicated that the role of the SAS should be as the “traffic cop” for the band, keeping track of which channels are available, but the SAS should not directly control devices or networks.

The wireless industry representatives also explained that there is no reason for PAL users to share real time operational information with external SAS providers.¹³ Incumbent operations will initially be protected through fixed exclusion zones, which can be determined based on simulated aggregate interference impacts. Meanwhile, GAA users can implement sensing techniques to avoid interfering with higher tier operations and by coordinating with the SAS to determine which PALs channels are in use. Indeed, SAS handling and processing of the very large amount of PAL CBSD measurement data does not seem feasible. In managed networks like LTE, there are interfaces and protocols standardized in 3GPP where all the elements in the network are constantly sharing information on control channels. For any external system like the SAS to implement similar interference coordination mechanisms among different systems, while processing very large amounts of CBSD measurement data, is not practical.

* * *

¹¹ See, e.g., AT&T Services, Inc. (“AT&T”) Comments at 12-18; CTIA – The Wireless Association® (“CTIA”) Comments at 9-10, 14; Ericsson Comments at 7-8; T-Mobile USA, Inc. (“T-Mobile”) Comments at 4-5; Verizon Comments at 10-11. The referenced comments were submitted in response to the *FNPRM* on or around July 14, 2014 in GN Docket No. 12-354.

¹² See, e.g., Alcatel-Lucent; AT&T Comments at 18-19; CTIA Comments at 14; Ericsson Comments at 6-7; QUALCOMM Incorporated Comments at 13; T-Mobile Comments at 10.

¹³ See Google Letter at 5.

For the foregoing reasons, the FCC should reject the requests of Google, Federated Wireless, NCTA, and OTI/PK to foreclose a new technology – LTE-U – in a band that has been highlighted as the “innovation band.”¹⁴ The Commission should stay the course and set basic parameters, like power levels, emissions, and interference limits, for all technologies to abide by. More broadly, the Commission should set policies to enable tunable devices across the 3.5 GHz band, support PALs licensing, and allow SAS administration that will prompt robust competition.

Pursuant to Section 1.1206 of the Commission’s rules, 47 C.F.R. § 1.1206, this letter is being electronically filed via ECFS. If you have any questions, please do not hesitate to contact me.

Sincerely,

/s/ Scott K. Bergmann

Scott K. Bergmann
Vice President, Regulatory Affairs
CTIA – The Wireless Association®

Attachment

¹⁴ See *Commercial Operations in the 3550-3650 MHz Band*, Further Notice of Proposed Rulemaking, 29 FCC Rcd 4273, 4275 ¶ 2 (2014) (“*FNPRM*”) (“The 3.5 GHz Band could be an ‘innovation band,’ where we can explore new methods of spectrum sharing and promote a diverse array of network technologies.”).

ATTACHMENT

List of Wireless Industry Attendees

Jeffrey Marks, Alcatel-Lucent
Milind Buddhikot, Alcatel Lucent (via telephone)
Stacey Black, AT&T
Neeti Tandon, AT&T (via telephone)
Jeannette Kennedy, Nokia (via telephone)
Dean Brenner, Qualcomm
John Kuzin, Qualcomm
Durga Malladi, Qualcomm (via telephone)
Darryl Degruy, US Cellular (via telephone)
Patrick Welsh, Verizon
Max Solondz, Verizon (via telephone)
Garrie Losee, Sprint (via telephone)
Scott Bergmann, CTIA
Brian Josef, CTIA
Adam Krinsky, Wilkinson Barker Knauer, LLP, on behalf of CTIA

List of FCC Attendees

John Leibovitz, WTB
Kamran Etemad, WTB
Chris Helzer, WTB
Brian Regan, WTB (via telephone)
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