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June 9, 2010

VIA ELECTRONIC FILING

Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: Ex Parte Presentation
WT Docket Nos. 06-150, 09-66

Dear Ms. Dortch:

In its May 12, 2010 letter in the above-captioned docket,^{1/} Verizon Wireless purports to clarify what it describes as “several incorrect assertions” made by T-Mobile USA, Inc. (“T-Mobile”) regarding the relative utility of lower- and higher-frequency mobile spectrum bands. Far from offering a clarification, however, Verizon Wireless seeks to obfuscate T-Mobile’s argument that making more spectrum available in the lower bands would be especially effective in promoting competition in the wireless marketplace^{2/} – a “fundamental goal of the Commission’s policymaking.”^{3/}

Verizon Wireless first attempts to minimize the benefits of lower band spectrum. In its original filing, T-Mobile, citing support from a recent NIST study, argued that the superior propagation characteristics of lower band spectrum allow for the transmission of bandwidth over longer distances than high frequencies, at lower cost and with better in-building coverage. The recent *Wireless Competition Report* affirms this point.^{4/} Verizon

^{1/} See Letter to Marlene H. Dortch, Secretary, FCC, from Tamara Preiss, Verizon Wireless, WT Docket Nos. 09-66 and 06-150 (filed May 12, 2010) (“Verizon Wireless Letter”).

^{2/} See Letter to Marlene H. Dortch, Secretary, FCC, from Kathleen O’Brien Ham, T-Mobile, WT Docket Nos. 09-66 and 06-150 (filed Apr. 26, 2010).

^{3/} See, e.g., *Annual Report and Analysis of Competitive Market Conditions with Respect to Mobile Wireless, Including Commercial Mobile Services*, WT Docket No. 09-66, Fourteenth Report, FCC 10-81, at ¶ 1 (rel. May 20, 2010) (“*Fourteenth Wireless Competition Report*”).

^{4/} See, e.g., *id.* at ¶ 4 (“In particular, lower-frequency spectrum possesses superior propagation characteristics that create certain advantages in the provision of mobile wireless broadband service, especially in rural areas.”); *id.* at ¶ 269 n.731 (citing *United States of America v. AT&T Inc. and Dobson Communications Corp.*, Competitive Impact Statement (filed Oct. 30, 2007) (citation omitted)) (“...the propagation characteristics of [1900 MHz PCS] spectrum are such that signals extend to a significantly smaller area than do 800 MHz cellular signals. The relatively higher cost of building out 1900 MHz spectrum, combined with the relatively low

Wireless's response is that "in urban and suburban areas where capacity constraints are the driving design criteria, the more favorable propagation characteristics of lower-frequency bands are not important" and that "higher-frequency bands . . . offer clear benefits" in such areas. Yet those benefits are apparently not compelling to Verizon Wireless itself, whose CEO recently touted its national 700 MHz footprint for the company's 4G rollout as a once-in-a-career opportunity.^{5/} Verizon Wireless will apparently use this spectrum for 4G in urban as well as rural markets because of its "superior" in-building propagation characteristics and its throughput capability.^{6/}

Verizon Wireless's attempt to minimize the value of lower band spectrum in its May 12 letter is contradicted not only by its CEO's recent statements, but by the prices it paid for 700 MHz spectrum in urban areas in Auction 73. In the A Block alone, for instance, it spent \$429 million for the New York City-Long Island area and its surroundings, \$247 million in the Philadelphia-Atlantic City area and its surroundings, \$122 million in the Washington-Baltimore area, \$102 million in Tampa-St. Petersburg alone, and nearly \$80 million in the Detroit-Ann Arbor-Flint, MI area, to name a few.^{7/}

Indeed, one need only look at the results of Auction 73 in general for evidence of the premium value placed on 700 MHz spectrum in all markets. The provisionally winning bids for the A, B, C, and E Block licenses exceeded the aggregate reserve prices for those blocks raising a total of nearly \$19 billion in net winning bids.^{8/} By contrast, the auction of 50 percent more spectrum in the higher frequency AWS-1 band raised \$5 billion less than Auction 73.^{9/}

Citing an engineering report it submitted in another proceeding, Verizon Wireless claims that "[s]everal closely related aspects of today's mobile technologies – specifically

population density of the areas in question, make it unlikely that competitors with 1900 MHz spectrum will build out their networks to reach the entire area served by the two 800 MHz Cellular providers.”).

^{5/} Statement of Lowell McAdam, Verizon Communications - EVP, President and CEO Verizon Wireless, Verizon at Barclays Capital Communications, Media and Technology Conference, May 26, 2010, Transcript at 2 (“I will tell you in my career in wireless I have never had the opportunity to have this kind of spectrum and be able to use it.”), available at http://news.vzw.com/investor/20100526_transcript.pdf.

^{6/} *Id.* at 2-3. See also McAdam Barclays Presentation at 7 (referring to 700 MHz as “Best Spectrum”), 8 (“700 MHz Delivers Superior Building Penetration Advantages”), 10 (showing projected throughput), available at <http://news.vzw.com/investor/20100526.pdf>.

^{7/} See *Auction of 700 MHz Band Licenses Closes, Winning Bidders Announced for Auction 73*, Public Notice, 23 FCC Rcd 4572 (2008) (“Auction 73 Results PN”), Attachment A.

^{8/} See Auction 73 Results PN.

^{9/} See *Auction of Advanced Wireless Service Licenses Closes, Winning Bidders Announced for Auction 66*, Public Notice, 21 FCC Rcd 10521 (2006).

diversity antennas, smart antennas, and multiple-input, multiple-output (MIMO) – *can be expected to work better at higher frequencies than at lower frequencies.*^{10/} While it is true that building MIMO systems on devices will be more challenging for lower frequency bands, this certainly does not devalue the utility of the 700 MHz band even for these purposes. MIMO and other antenna technologies depend more on the form factors of the devices. For broadband type devices such as a modem or a router, it is still possible to implement MIMO in lower band frequencies. Contrary to Verizon Wireless’s suggestion, moreover, MIMO is likely to provide only limited benefit in rural deployment where there are fewer multiple paths between a transmitter and a receiver. In a rural environment the dominant factor will always be path loss. As in the case of the value of the 700 MHz band generally, Verizon Wireless itself has elsewhere recognized the usefulness of MIMO in the lower bands^{11/}

T-Mobile clearly believes in the value of higher band spectrum. Indeed, nearly 100 percent of T-Mobile’s spectrum is above 1 GHz. As the Commission recently noted, higher frequency spectrum can be effective for increasing capacity, particularly within smaller, more densely populated geographic areas.^{12/} High frequency spectrum does have limitations, however. It is not optimal for covering wide ranges at transmission powers equal to that of lower frequencies, penetrating building walls, or being as cost effective due to the necessity for more transmitters.^{13/}

Given the widely acknowledged utility of lower band spectrum, as well as the uses of higher frequencies (particularly when coupled with duplexing equipment, as Verizon Wireless noted), it is clear that a mix of high and low band spectrum is optimal for providers seeking to cover large areas which may contain both dense population centers, suburban areas, and broad rural tracts. A mix of high and low frequencies in a carrier’s spectrum portfolio allows for fewer coverage holes, more buildout, more competition, and consequently happier consumers.

The spectrum strategies of Verizon Wireless (along with AT&T) demonstrate the efficacy of this approach – as this chart from the *Fourteenth Wireless Competition Report* demonstrates:

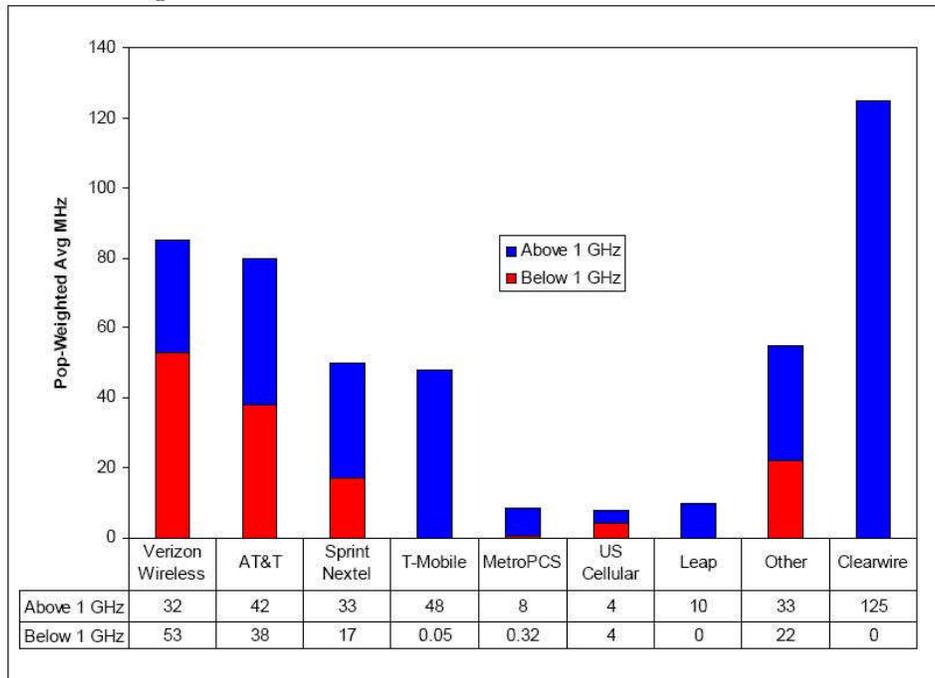
^{10/} Verizon Wireless Letter at 3 (emphasis in original).

^{11/} See Verizon Wireless, *LTE: The Next-Generation Network* (noting, as a benefit of LTE, which Verizon Wireless intends to deploy at 700 MHz, “MIMO antennas – Doubles the throughput – Deployment simplicity.”), available at <https://www.lte.vzw.com/Portals/95/docs/LTE%20The%20Next%20Generation%20Network.pdf>.

^{12/} *Fourteenth Wireless Competition Report* at ¶ 4.

^{13/} T-Mobile estimates that build out of 700 MHz spectrum would require approximately 25 to 30 percent of the sites needed to build out AWS-1 spectrum. See Comments of T-Mobile USA, Inc., GN Docket No. 09-51 *et al.*, NBP Public Notice #26 at 11 (filed Dec. 22, 2009).

Chart 41
Population-Weighted Average Megahertz Under/Over 1 GHz (Licensed Spectrum Only)



Contrary to Verizon Wireless’s efforts to paint the 700 MHz band as widely held, however, the Commission has found otherwise:

Of the sub-1 GHz spectrum, Verizon Wireless and AT&T each hold a significant amount of the Cellular and 700 MHz spectrum....Specifically, when measured on a licensed MHz-POP basis, Verizon Wireless holds 48.5 percent of the Cellular spectrum and 42.7 percent of the 700 MHz spectrum, and AT&T holds 42.3 percent of the Cellular spectrum and 24.3 percent of the 700 MHz band spectrum. Adding these two bands together, Verizon Wireless holds 45 percent of the licensed MHz-POPs of the combined Cellular and 700 MHz band spectrum, AT&T holds 33 percent, and US Cellular holds approximately 5 percent. Several other, smaller providers’ combined holdings total less than four percent of the Cellular but nearly a third of the 700 MHz spectrum.^{14/}

While T-Mobile may have significant spectrum capacity measured by site*MHz per subscriber,^{15/} in the same presentation where T-Mobile made that point it also reiterated the fact that it has the least “spectrum depth” in the lower bands of any of the national

^{14/} *Fourteenth Wireless Competition Report* at ¶ 275.

^{15/} Verizon Wireless Letter at 2 (citing Deutsche Telekom Investor Day, T-Mobile USA: Regaining U.S. Market Position, at 23, available at http://www.download-telekom.de/dt/StaticPage/83/41/44/dtag_investor_day_presentation_usa_dotson_834144.pdf).

carriers.^{16/} Tellingly, Verizon Wireless references only T-Mobile's presentation of the first point and ignores the fact that the second was made in tandem with it.

Nothing in Verizon Wireless's letter detracts from the T-Mobile's point – that the Commission should move forward expeditiously to make the D Block and other lower band spectrum available under rules that promote competition in the wireless marketplace. The undisputed value of lower band spectrum has been validated by the Commission, NIST, and now Verizon Wireless's CEO – and there can likewise be no dispute that the vast amount of that spectrum remains in the hands of the two largest carriers. Adoption of the related proposals in the Broadband Plan will ensure that the D Block and the entire 700 MHz band can also be used to meet the advanced communications needs of public safety entities.

Sincerely,

/s/

Kathleen O'Brien Ham
Vice President, Federal Regulatory

cc: Bruce Gottlieb
Angela Giancarlo
Charles Mathias
Louis Peraertz
John Giusti
Ruth Milkman
James Schlichting
John Leibovitz
Nese Guendelsberger

^{16/} Deutsche Telekom Investor Day. T-Mobile USA: Regaining U.S. Market Position, at 23.