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EX PARTE

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

Re: WT Docket No. 09-66, Fourteenth Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile Services

WT Docket No. 06-150, Service Rules for the 698-746, 747-762 and 777-792 Bands

Dear Ms. Dortch:

In a recent filing, T-Mobile USA, Inc. ("T-Mobile") makes several incorrect assertions about the relative utility of lower- and higher-frequency mobile spectrum bands as well as the nature of spectrum holdings in today's market.[1] Verizon Wireless takes this opportunity to respond and clarify the record:

- Lower-frequency spectrum bands are not *per se* more "effective" than higher-frequency bands and, in fact, higher-frequency bands offer advantages in many capacity-driven deployments.
- Nearly 100 bidders other than Verizon Wireless and AT&T acquired licenses in the 700 MHz auction, including one in every market. T-Mobile had every opportunity to secure 700 MHz spectrum in Auction 73 but chose not to participate because it had "no compelling need" for the spectrum.
- Empirical evidence demonstrates Verizon Wireless's history of deploying next-generation mobile broadband services as aggressively – if not more – in areas where Verizon has landline operations, and any suggestion that the company has limited incentives to deploy 4G in-region is specious.

The Commission should reject efforts to skew national spectrum policy in support of specific business plans and instead pursue a competitively neutral policy framework that ensures the mobile wireless marketplace is driven first and foremost by consumer preferences.

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[1] *See* Letter to Marlene H. Dortch, Secretary, FCC, from Kathleen O'Brien Ham, T-Mobile, WT Docket Nos. 09-66 and 06-150, at 1 (filed Apr. 26, 2010) ("T-Mobile Letter").

T-Mobile is correct that "not all spectrum is created equal" – but its implication that higher-frequency mobile spectrum bands are* per se *less "efficient" than spectrum in the lower bands is simply wrong.[2] T-Mobile accurately points out that lower-frequency bands are capable of transmitting over longer distances than higher frequencies,[3] and thus, are well-suited for deploying networks in low density rural areas where economics demand the use of fewer cell sites. The advantages of lower-frequency bands in extending network coverage do not apply to all deployment scenarios, however.

The National Broadband Plan makes clear that more spectrum is needed to meet burgeoning demand, observing that "[d]emand for mobile broadband services is growing rapidly with the introduction of new devices (e.g., smartphones, netbooks) and with 3G and 4G upgrades of mobile networks."[4] But the Plan recognizes that coverage is not the only issue; capacity is the paramount concern in urban areas where demand is greatest.[5] And, as discussed below, 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. In these capacity-constrained markets, higher-frequency bands – i.e., spectrum from 1-3.7 GHz – offer clear benefits.

Indeed, Sprint Nextel's Chief Technology Officer has recognized this point when touting its 2.5 GHz spectrum as comparing favorably to 700 MHz spectrum:

> The 2.5 gigahertz band spectrum Sprint Nextel's WiMAX network will use compares favorably to 700 megahertz band spectrum. *While the lower band enables coverage to be deployed more cheaply initially, the upper band allows greater overall capacity to handle more subscribers*.[6]

A month before filing its letter, T-Mobile touted to investors that its spectrum position, which includes significant holdings in the 1.9 and 1.7/2.1 GHz bands, affords it the "[m]ost capacity in the industry."[7] T-Mobile's complaints to the Commission today about its spectrum holdings ring hollow in light of this and other statements to investors, as discussed further below.

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[2] *Id.* at 2.
[3] *Id.* at 1.
[4] *See* Federal Communications Commission, *Connecting America: The National Broadband Plan* at 89 (2010), *available at* http://download.broadband.gov/plan/nationalbroadband-plan.pdf..

[5] *See id*. ("[I]ncreased spectrum demands are primarily an urban phenomenon.").
[6] *Sprint Nextel CTO Offers Vigorous Defense of WiMAX*, TRDaily, Apr. 22, 2008 (emphasis added) (quoting Barry West, Chief Technical Officer of Sprint Nextel Corporation).
[7] Deutsche Telekom Investor Day. T-Mobile USA: Regaining U.S. Market Position, at 23 (Mar. 18, 2010) (measured on a "Site*Hz per Subscriber" basis) (Presentation by Robert Dotson, CEO and President, and Brian Kirkpatrick, CFO), *available at* http://www.download-telekom.de/dt/StaticPage/83/41/44/dtag_investor_day_presentation_usa_dotson_834144.pdf.

Moreover, technical materials already on file with the Commission document that higher spectrum bands are advantageous where additional capacity is needed. Some radio systems actually perform better in higher-frequency bands, because wavelengths at higher frequencies are shorter than those at lower frequencies. As Dr. Charles Jackson explained in a previous report, "[s]everal closely related aspects of today's mobile technologies—specifically diversity antennas, smart antennas, and multiple-input, multiple-output (MIMO) – *can be expected to work better at higher frequencies than at lower frequencies*." [8] This is because these advanced antenna systems are most effective if they are well separated, and shorter wavelengths allow more antennas to be used in close proximity while maintaining needed separation.[9] These systems are not suitable for lower spectrum bands, which require larger antennas.[10]

Further, higher frequencies can result in significant efficiencies when duplexing equipment is used. AT&T recently explained, "[a] single duplexer can span a larger block of spectrum at 2.5 GHz, for example, than it could at 700 MHz," and "[b]roadband technologies, such as LTE and WiMAX, can exploit 20 MHz or more of contiguous spectrum in a single channel to deliver their highest spectral efficiency and highest throughputs."[11] In other words, higher-frequency bands can allow LTE/WiMAX operators to maximize the performance of their high-speed services.

T-Mobile's claim that lower band spectrum is inherently better to meet broadband deployment needs reflects "obsolete views" that fail to take into account the advantages of each band and "state-of-the-art" technologies.[12] The Commission should view spectrum suitable for commercial mobile communications as a whole, and should not accept the arbitrary distinctions T-Mobile suggests.

Despite claims to the contrary, 700 MHz licenses were widely disseminated at auction. T-Mobile suggests that the Commission should make more spectrum available in the lower bands "to smaller carriers," noting that "[i]n Auction 73, AT&T and Verizon bought nearly $16 billion of the $19 billion worth of licenses in this band."[13] As Verizon Wireless has previously shown, the 700 MHz auction resulted in substantial license acquisitions by new and incumbent service

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[8] *See* Charles Jackson, The Supply of Spectrum for CMRS, at 8 (Aug. 19, 2008) ("Jackson Declaration") (emphasis added), appended to Joint Opposition to Petitions to Deny and Comments of Cellco Partnership d/b/a Verizon Wireless and Atlantis Holdings Inc., WT Docket No. 08-95, Att. 4 (Aug. 19, 2008).
[9] *See id*. at 9.
[10] *See* WiMAX Forum® Position Paper for WiMAX™ Technology in the 700 MHz Band, WiMax Forum, March 2008, at 11 ("Advanced Antenna Systems (AAS), that significantly improve link margin, capacity and interference in higher frequency bands, are not … applicable for 700 MHz due to size and antenna spacing limitations.").
[11] *See* Letter to Marlene Dortch, Secretary, FCC, from Jeanine Poltronieri, Assistant Vice President, External Affairs, AT&T, WT Docket No. 09-66, at 3 (May 6, 2010).
[12] Jackson Declaration at 10; *see also, e.g.*, Motorola White Paper, WiMAX Delivers Performance & Value at 3.5 GHz, at 4 ("[T]he enhanced air interface and advanced, multi-antenna techniques offered with WiMAX allows the platform to overcome many of the disadvantages of the higher frequency of operation. As a result, typical mobile WiMAX networks operate with a very similar number of base sites for a given geography as legacy 2G and 3G networks."), http://www.motorola.com/staticfiles/Business/Solutions/Industry%20Solutions/Service%20Providers/Wireless%20Operators/Wireless%20Broadband/wi4%20WiMAX/_Document/StaticFile/3%205%20GHz_WP_0708_UKv1.pdf?localeId=33 .
[13] T-Mobile Letter at 2.

providers other than the nationwide carriers.[14] Indeed, 99 bidders, other than the nationwide service providers, won 754 (or 69%) of the 1090 licenses sold, including at least one license in every market.[15] In addition, 55% of the winning bidders claimed designated entity bidding credits as small businesses, and there were also substantial license acquisitions in rural areas by new players – 75 new entities won 428 licenses in 305 rural service areas.[16]

To the extent T-Mobile is suggesting that it was somehow disadvantaged from acquiring spectrum in Auction 73, this is not true: T-Mobile lacks 700 MHz spectrum because it chose to sit out the auction.[17] At the time, T-Mobile had doubled its spectrum position a year earlier in Auction 66,[18] and T-Mobile's president stated that the company did not need more spectrum: "Other auctions will come up," he said. "We will look at them but I can tell you there is no compelling need. We solved the need... for our spectrum here in the U.S."[19] Likewise, Sprint Nextel chose not to participate in Auction 73 because of its spectrum position: "[W]e have no interest in participation in [the 700 MHz auction]," stated Sprint Nextel's CEO. "We've got the best spectrum position of any of the carrier competitors."[20]

Thus, all carriers – including the other nationwide providers – had every opportunity to participate in the 700 MHz auction. T-Mobile and Sprint elected not to participate because they were satisfied with their spectrum positions – not because of any actions by Verizon Wireless or AT&T.

T-Mobile's suggestion that Verizon Wireless lacks incentive to deploy next generation networks because of its landline affiliation is baseless, as historical evidence demonstrates. T-Mobile is flat wrong to suggest that, because Verizon owns wireline networks in areas where it also holds 700 MHz spectrum, it "may not have the same competitive incentives that non-wireline entities have to use spectrum to compete with wireline voice and data services."[21] T-Mobile submits no facts or data to support this claim. In fact, just the opposite is true, as empirical evidence of Verizon Wireless's services – including 3G deployment history and early 4G testing plans – demonstrate.

In a recent study filed with the Commission, Professors Gary Becker and Dennis Carlton compared data on the speed of Verizon Wireless's deployment of 3G wireless broadband services

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[14] *See* Comments of Verizon Wireless, WT Docket No. 09-66, at 47-48 (Sept. 30, 2009).
[15] *See* News Release, FCC, Statement by Chairman Kevin J. Martin, at 1 (Mar. 20, 2008), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-280968A1.pdf.
[16] *Id.*
[17] *See Public Notice*, DA 08-83, "Auction of 700 MHz Band Licenses; 214 Bidders Qualified to Participate in Auction 73" (Jan. 14, 2008); *see also, e.g.*, Jeffrey Silva, *Let the Bidding Begin; Concern Remains, but 700 MHz Auction Set*, Communications Daily, Jan. 21, 2008 (noting that T-Mobile was "taking a pass" on participating in the 700 MHz auction).
[18] *See T-Mobile Calls AWS Auction Huge Success, Allowing 3G Rollout*, Communications Daily, Oct. 10, 2006.
[19] *Id.* (quoting T-Mobile USA President Robert Dotson).
[20] *See CEO Says Sprint Expects to Sit Out 700 MHz Auction*, Communications Daily, Mar. 1, 2007 (quoting Sprint Nextel CEO Gary Forsee).
[21] T-Mobile Letter at 2.

in the Metropolitan Statistical Areas ("MSAs") in which Verizon provides incumbent wireline services to the those MSAs in which it has no or only a partial wireline presence.[22] The results were conclusive: "3G services [by Verizon Wireless] tended to be introduced earlier in those MSAs in which Verizon Communications is the incumbent provider of wireline services."[23] Similarly, Verizon Wireless's 4G wireless broadband trials have taken place in markets where the company offers wireline service.[24] If Verizon Wireless lacked incentive to compete vigorously with Verizon's wireline business, then it would have done just the opposite. As Professors Becker and Carlton conclude:

> [C]oncern that firms such as Verizon and AT&T that have wireline operations will not aggressively deploy 4G services is inconsistent with the empirical evidence regarding its historical and planned deployment of broadband wireless services.[25]

Moreover, Verizon Wireless (as well as AT&T, T-Mobile and Sprint) compete on a national basis in terms of their price and service offerings. Verizon Wireless is just as aggressive in trying to win and retain customers in markets in which Verizon has a landline presence as it is in markets where the company offers only wireless services. In other words, Verizon Wireless provides the *same* offerings and competes vigorously both out-of-region *and* in-region.

Even apart from this empirical evidence and the real world practice of nationwide pricing and service, Professors Becker and Carlton demonstrated that Verizon Wireless has no incentives to hold back its wireless services for the sake of its wireline business. To the contrary, the company "ha[s] strong incentives to deploy 4G services everywhere given the deployment now being undertaken by wireless, cable firms and others."[26] For example, Clearwire has launched 4G service in at least 27 markets with over 34 million people and plans to cover 120 million people in 80 markets by the end of this year; Sprint and cable companies such as Comcast and Time Warner are reselling Clearwire's 4G service in markets across the country; AT&T will be starting LTE trials in this year, with commercial deployment beginning in 2011; and regional provider MetroPCS plans to begin deployment of its LTE network in the second half of this year.[27] Absent a competitive response, customers who want wireless 4G service can switch from Verizon's wireline or wireless service to a rival's wireless service.[28] Verizon Wireless thus plans to deploy LTE commercially in 25 to 30 markets later this year, and nationwide by 2013, to compete for

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[22] Reply Declaration of Gary S. Becker and Dennis W. Carlton, at ¶¶ 42-43 (Apr. 7, 2010) ("Becker/Carlton Declaration"), *appended to* Reply Comments of Verizon and Verizon Wireless, GN Docket No. 09-191 and WC Docket No. 07-52, Att. A (Apr. 26, 2010) ("Verizon Open Internet Reply Comments").
[23] *Id*. at ¶ 44.
[24] *Id*. at ¶ 45.
[25] *Id*. at ¶ 46.
[26] *Id*. at ¶ 41.
[27] *See* Verizon Open Internet Reply Comments at 29
[28] Verizon Open Internet Reply Comments at 30; *see* Becker/Carlton Declaration at ¶ 41. Further, having wireline and wireless alternatives from which customers can choose (or packages offering combinations of these alternatives) also increases the chance that Verizon will retain (or gain) a customer's business. Verizon Open Internet Reply Comments at 30-31.

broadband consumers – exactly the conduct that demonstrates that the wireless industry remains effectively competitive.[29]

Thus, the Commission should reject the tired and unsupported claim that a landline affiliation will temper companies' commitment to deploy next generation wireless services and reduce their willingness to compete vigorously.

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In sum, T-Mobile's arguments fail to persuade. Verizon Wireless encourages the Commission to pursue a competitively neutral spectrum policy that ensures the interests of American consumers remain paramount.

Pursuant to Section 1.1206 of the Commission's rules, this *ex parte* presentation is being filed electronically in these proceedings. Should you have questions regarding this filing, please contact the undersigned.

Respectfully submitted,

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

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[29] *See* Brad Reed, *Q&A: Verizon's LTE Road Map for 2010 and Beyond*, Network World, Feb. 25, 2010, http://www.networkworld.com/news/2010/022510-verizon-lte-melone.html (quoting Verizon Wireless Executive Vice President and CTO Tony Melone).