COALITION FOR 4G IN AMERICA

June 22, 2010

Written Ex Parte Presentation - via Electronic Filing

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

Re: *700 MHz Interoperable Broadband Public Safety Network*
WT Docket No. 06-150, PS Docket No. 06-229,
GN Docket Nos. 09-47, 09-51, 09-137, RM Docket No. 11592

Dear Ms. Dortch:

On June 14, 2010 the Federal Communications Commission ("Commission") released a study entitled "The Public Safety Nationwide Interoperable Broadband Network: A New Model for Capacity, Performance and Cost" ("*Capacity Study*").[1] The Coalition for 4G in America ("Coalition") applauds the Commission for engaging in a comprehensive analysis of the capacity needs for users of the interoperable public safety broadband networks recommended in the National Broadband Plan.[2] The Coalition supports the Commission's findings and endorses the assumptions that lead the Commission to conclude in the *Capacity Study* that 10 MHz of spectrum in the 700 MHz band can meet the day-to-day capacity needs of the public safety community.

In light of the 700 MHz band's superior radio frequency propagation characteristics, the allocation of 10 MHz in that band will provide public safety with ample coverage and capacity when used in a cellular network architecture. Additionally, the near uniform adoption of spectrally efficient broadband technology across the entire 700 MHz band could allow public safety users to roam with priority access on adjacent commercial networks during surges in bandwidth demand. As explained below, the Coalition agrees with the central findings of the *Capacity Study* that site density, spectrally efficient technology, and roaming with priority access are critical inputs in maximizing the capacity of interoperable public safety broadband networks.[3]

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[1] *The Public Safety Nationwide Interoperable Broadband Network: A New Model for Capacity, Performance and Cost*, The Federal Communications Commission (June 2010) ("*Capacity Study*").

[2] *Connecting America: The National Broadband Plan*, The Federal Communications Commission ("National Broadband Plan") (March 2010), at 314.

[3] *See Capacity Study* at 5-7.

Site Density: Increasing site density is the first input for improving broadband network capacity. As observed in the *Capacity Study*, cellular network architecture necessarily involves more sites as well as frequency reuse, particularly in urban environments.[4] In contrast, the legacy "high tower – high power" public safety land mobile radio network architecture constrains network capacity in an attempt to obtain lower infrastructure cost.[5] The National Broadband Plan recommends using a cellular architecture and leveraging commercial network facilities in the deployment of interoperable public safety broadband networks. As discussed in the *Capacity Study*, use of a commercial cellular architecture would: lower costs for the public safety network and associated mobile devices by increasing market scale; increase network capacity; increase in-building coverage; and reduce the potential for interference. A dense cellular architecture also provides additional benefits, including network survivability through coverage redundancy, lower handset power, and handset miniaturization. Consequently, using a cellular architecture with high site density in the design of interoperable public safety broadband networks makes perfect sense.

Spectrally Efficient Technology: A second input in increasing broadband network capacity is the use of technology that maximizes spectral efficiency, enables frequency reuse for greater site density, and produces high average throughput. LTE, for example, is one of several technologies that is spectrally efficient, allows high frequency reuse, and provides an estimated average data transfer rate of 7-8 Mbps in each sector, with higher peak speeds, using a 5 x 5 MHz channel pairing.[6] The scenarios analyzed in the *Capacity Study* showed that such a link would provide adequate bandwidth for public safety using a cellular network architecture.[7] Likewise, Coalition members' own experience in providing service to users who make intensive use of wireless bandwidth concur with the findings in the *Capacity Study* that a mix of public safety applications could be provided in a single 10 MHz sector using a spectrally efficient technology.

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[4] *See Capacity Study* at 5; *see also Capacity Study* at 20-24.

[5] For example, in New York City, 4G Coalition member T-Mobile USA Inc. operates more than 1000 cell sites. In contrast, the City of New York Department of Information Technology and Telecommunications submitted a white paper describing a 700 MHz network using only 200 sites, or less than one-fifth the size of T-Mobile's network in New York City. *See* Letter to Ms. Marlene H. Dortch from the City of New York at 30, WT Docket 06-150, filed Feb. 23, 2010.

[6] *See* Transcript of Record at 39, *700 MHz Nationwide Interoperable Public Safety Wireless Broadband Network Workshop* (Mar. 17, 2010). Mr. Patrick Ringqvist, Vice President, Wireless Network Solutions, Ericsson, Inc. stated that "We believe that an LTE based public network can provide a wide area coverage and with the speeds meeting the needs of public safety. Using the broadband spectrum allocation 5 plus 5 MHz, you can build a network that can support peak speeds in excess of 30 megabit per second with an average throughput of 7 to 8 megabits per second in the cell site, and this certainly meets the needs of public safety in our minds."

[7] *See Capacity Study* at 18-36.

Roaming with Priority Access: A third input in maximizing network capacity is roaming on other broadband networks when demand for bandwidth exceeds the bandwidth available on the home network. As the *Capacity Study* observes, roaming with priority access on commercial broadband networks at 700 MHz, and potentially in other bands, would give users of interoperable public safety broadband networks surge capacity.[8] Roaming with priority access would also enable the use of commercial 700 MHz networks where an interoperable public safety broadband network hasn't been built.[9] However, simply allowing users of interoperable public safety broadband networks the ability to roam on the commercial networks using the 700 MHz D block is not enough. The Commission should facilitate the creation of a competitive 700 MHz ecosystem by enabling roaming for all user equipment across the entire 700 MHz band and adopting the 700 MHz D block reconfiguration proposal of the Coalition.[10]

The National Broadband Plan presents the public safety community with a timely and unique opportunity to leverage commercial broadband technology through public/private partnerships for the next generation of public safety communications. The Coalition commends the Commission for its innovative approach to meeting critical public safety communication requirements and looks forward to working with the FCC to continue to implement the NBP's important public safety goals.

Pursuant to Section 1.1206(b) of the Commission's rules, an electronic copy of this letter is being filed with the office of the Secretary. If you have any questions regarding this filing, please contact the undersigned.

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[8] *See Capacity Study* at 7.

[9] *See Capacity Study* at 7 ("Roaming with priority access will also provide increased reliability and resiliency, especially if any roaming partner utilizes different cell tower sites for all or some of its network").

[10] *See* Letter to Ms. Marlene H. Dortch from MetroPCS Comm. Inc., Sprint Nextel Corp., *et al.*, WT Docket No. 06-150, filed May 10, 2010 ("*700 MHz Band Analysis*"); Letter to Ms. Marlene H. Dortch from the Coalition for 4G in America, WT Docket No. 06-150, filed Apr. 28, 2010 ("*700 MHz Upper A Block Combination Letter*").

Respectfully submitted,

/s/ Thomas J. Sugrue
Vice President Government Affairs
T-Mobile USA, Inc.
401 9th Street, NW
Suite 550
Washington, DC 20004

/s/ Michael I. Gottdenker
Michael I. Gottdenker
Chairman and CEO
Access Spectrum, LLC
3 Bethesda Metro Center
Suite 500
Bethesda, MD 20814

/s/ Marshall W. Pagon
Marshall W. Pagon
Chairman and CEO
Xanadoo Company
225 City Avenue, Suite 200
Bala Cynwyd, PA 19004

/s/ *Caressa D. Bennet*
Caressa D. Bennet
General Counsel
Rural Telecommunications Group, Inc.
10 G Street, NE, Suite 710
Washington, DC 20002

/s/ Chris Murray
Chris Murray
Vice President – External Affairs
Clearwire Corporation
815 Connecticut Ave., NW
Washington, DC 20006

/s/ *Lawrence R. Krevor*
Lawrence R. Krevor
Vice President, Spectrum
Sprint Nextel Corporation
900 7th Street, NW
Suite 700
Washington, DC 20001

/s/ Steven K. Berry
Steven K. Berry
President & CEO Rural Cellular Association
805 15th Street, NW
Suite 610
Washington, DC 20005

cc: James A. Barnett, Jr
Stuart Benjamin
Jeff Cohen
Paul de Sa
Monica Desai
David Furth
Angela Giancarlo
John Giusti
Nese Guendelsberger
Bruce Liang Gottlieb
Evan R. Kwerel
John Leibovitz
Jennifer Manner
Charles Mathis
Ruth Milkman
Paul Murray
Louis Peraertz
Susan Singer
James Schlichting
Walter Strack
Joel Taubenblatt
Peter Trachtenberg
Margaret Wiener
Jeff Goldthorp
Julius Knapp
Tom Peters
Nicole McGinnis