



February 5, 2016

Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12th Street, SW  
Washington, DC 20510

Jeffrey A. Marks  
Government Relations  
Nokia

Address:  
1100 New York Avenue, NW  
Suite 705 West  
Washington, DC 20005

Email:  
jeffrey.marks@nokia.com

**Re: *Notice of Ex Parte Presentation*  
GN Docket No. 14-177, IB Docket No. 15-256, RM-11664, WT Docket No. 10-112,  
IB Docket No. 97-95, GN Docket No. 12-354**

Dear Ms. Dortch:

On February 3, 2016, Brian Hendricks and Jeffrey Marks of Nokia, met with Commissioner Jessica Rosenworcel and Johanna Thomas, Legal Advisor to the Commissioner. In the meeting, Messrs. Hendricks and Marks discussed Nokia's vision for the future of wireless communications, including key actions the Commission can take to facilitate a transition to Fifth Generation (5G) wireless networks. The attached presentation and the Comments of Nokia, submitted to the Commission on January 27, 2016 in GN Docket No. 14-177, et al. ("*Spectrum Frontiers NPRM*"), served as the basis for the discussion.

Specifically, the Nokia representatives urged the Commission to take expeditious action on each of the four bands identified in the *Spectrum Frontiers NPRM*, including the 28 GHz band, and to quickly commence proceedings to implement additional bands. 5G is not just about millimeter wave bands, but also low-band and mid-band spectrum. Quick Commission action in the 3.5 GHz band is critical in this respect. The service rules for 3.5 GHz include many innovative concepts; real-world deployment in that band will serve as a baseline for innovation that could be applicable to many future bands. Not only should the Commission move forward at 3.5 GHz, it should consider that band as a 150 MHz centerpiece for an extremely valuable swath of spectrum from 3.1 GHz to 4.2 GHz, all of which should be studied for mobile broadband.

In addition to spectrum, 5G will rely on a massive deployment of infrastructure, including small cells that will bring the wireless network closer to the user. As an initial matter, the Commission should consider the need for wireless backhaul when studying new bands for mobile broadband. Wired backhaul will not be feasible in many cases. In addition, the Commission should take actions to mitigate the significant barriers to deploying small cells and other wireless infrastructure in communities across the Nation. Simply stated, ubiquitous 5G coverage will be impracticable under the

current local government and commercial frameworks that stifle, rather than embrace, wireless infrastructure deployment.

As a final matter, Nokia advocated for reforms to the experimental licensing process to encourage even greater experimentation, for longer periods of time, across multiple frequency bands.

Please contact the undersigned with any questions in connection with this submission.

Respectfully submitted,

*/s/ Jeffrey A. Marks*

Jeffrey A. Marks

cc: Commissioner Jessica Rosenworcel  
Johanna Thomas, Legal Advisor