

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of)	
)	
Modernizing and Expanding Access to the 70/80/90 GHz Bands)	WT Docket No. 20-133
)	
)	
Amendment of Part 101 of the Commission's Rules to Facilitate the Use of Microwave for Wireless Backhaul and Other Uses and to Provide Additional Flexibility to Broadcast Auxiliary Service and Operational Fixed Microwave Licensees)	WT Docket No. 10-153
)	
)	
Aeronet Global Communications Inc. Petitions for Rulemaking to Amend the Commission's Allocation and Service Rules for the 71-76 GHz, 81-86 GHz, and 92-95 GHz Bands to Authorize Aviation and Maritime Scheduled Dynamic Datalinks)	RM-11824 (Aviation) RM-11825 (Maritime)

COMMENTS OF NOKIA

Nokia submits these Reply Comments in response to Comments filed in this proceeding exploring innovative new uses of the 71-76 GHz and 81-86 GHz bands (the 70/80 GHz band) and the 92-94 GHz and 94.1-95 GHz band (the 90 GHz band).¹

I. THERE IS BROAD CONSENSUS FOR MOVING QUICKLY TO ALLOW LOWER GAIN ANTENNAS IN THE 70/80 GHz BAND

Nokia continues to urge swift adoption of the NPRM's lead proposal in the 70/80 GHz band to increase the maximum beamwidth 3 dB points from 1.2 degrees to 2.2 degrees and to reduce minimum antenna gain from 43 dBi to 38 dBi. This simple rule change will allow needed flexibility to deploy smaller, lighter backhaul antennas to facilitate 5G deployments in urban settings. We also urge that the Commission eliminate (or, alternatively, ease) the co-polar

¹ *Modernizing and Expanding Access to the 70/80/90 GHz Bands*, WT Docket No. 20-133 *et al.*, FCC 20-76 (rel. June 10, 2020) (“NPRM”).

and cross-polar discrimination requirements below 5 degrees. While there are other aspects to modernizing use of the 70/80 GHz band on which Nokia provided feedback in its Comments, Nokia considers these first two proposals the most critical to the proceeding, permitting immediate benefits to urban 5G deployments without any negative implications for existing or proposed new use cases.

In reviewing the record, Nokia is pleased that there is broad consensus for these changes and recognition that they should be implemented as soon as possible. For example, in supporting the NPRM's proposal for lower-minimum-gain, Verizon states in its Comments:

. . . the technical changes the Commission proposes to make to its antenna requirements will allow for the deployment of smaller antennas in the 70 GHz and 80 GHz bands that are well-suited to provide backhaul capacity for small cell 5G deployments. The revised antenna standards will lower the cost of 5G deployment, create a wider market for equipment due to harmonization with international standards, and encourage expanded use of the bands.²

T-Mobile similarly urges that, for small cell deployments in urban settings and other high-demand environments, "short-range high-speed backhaul and site connectivity is critical."³ As a final example of consensus, AT&T urges the adoption of rule changes that would allow lower-minimum gain antennas in the 70/80 GHz band, "as more options for wireless backhaul are needed and will facilitate 5G deployments."⁴

In sum, there is a clear, immediate need for the common-sense rule changes for allowing lower minimum gain antennas in the 70/80 GHz band, and an immediate demand for more 5G wireless backhaul options among key industry leaders. Moreover, the rule changes that will facilitate 5G wireless backhaul will not negatively impact the interference environment nor foreclose the additional use cases for endpoints in motion also considered in the NPRM, and

² Comments of Verizon, WT Docket No. 20-133 *et al.*, filed Aug. 5, 2020 at 2 ("Verizon Comments").

³ Comments of T-Mobile USA Inc., WT Docket No. 20-133 *et al.*, filed Aug. 5, 2020 at 2

⁴ Comments of AT&T, WT Docket No. 20-133 *et al.*, filed Aug. 5, 2020 at 3.

discussed below. The Commission should therefore adopt its proposed rule changes supported by Nokia in its Comments and widely supported in the comment record that will facilitate 5G wireless backhaul deployment.

II. PROPOSALS TO ALLOW ENDPOINTS IN MOTION WARRANT CONSIDERATION, BUT SHOULD NOT DELAY ADOPTION OF RULE CHANGES TO FACILITATE 5G WIRELESS BACKHAUL

While there is not yet consensus regarding endpoints in motion, as proposed in the NPRM and augmented in the Comment record, Nokia welcomes consideration of proposals for maritime, aeronautical and stratospheric services in the 70/80 GHz band. Commenters that are concerned about these new proposals generally believe that more study is required to build such consensus. In contrast, ample vetting has already been done for the NPRM's proposals focused on 5G wireless backhaul. As Verizon states in its comments in the context of discussing endpoints in motion, "The Commission should keep a laser focus on promoting increased adoption of the bands for fixed use—specifically for wireless 5G backhaul—at this critical time when wireless carriers are rapidly deploying 5G networks and there is an ever-increasing need for backhaul capacity."⁵ Nokia urges that the Commission give due consideration to the Aeronet, Loon and other proposals for endpoints in motion, but it should separately, and on an expedited timeframe implement an easy "win" for U.S. 5G and grant rule changes to allow lower minimum gain in the 70/80 GHz band where consensus already exists.

Nokia sees great potential for certain interference mitigation techniques proposed in the record that may allow introduction of new services into the 70/80 GHz band while protecting incumbent use cases. One proposal that holds promise is the temporospatial software-defined networking (Temporospatial SDN) platform proposed by Loon.⁶ If proven to work in

⁵ Verizon Comments at 3.

⁶ Comments of Loon LLC, WT Docket No. 20-133 *et al.*, filed Aug. 5, 2020 at 4.

practice, it could be used to “ensure coexistence with existing and future users of the 70/80 GHz bands.”⁷ Nokia supports due consideration for Loon’s proposal to “set a path toward a ‘more robust coordination and registration mechanism’”⁸ in the E-band and to explore “better monitoring of spectrum usage and more efficient coexistence of static and moving links” that could evolve into “a fully dynamic system that enables real-time self-coordination.”⁹ We look forward to working with industry and policymakers to reach consensus on the best way forward for these new proposals that could spur ever more intensive uses of the 70/80 GHz band.

III. CONCLUSION

As stated in our initial Comments and these Reply Comments, Nokia urges the Commission to implement its proposal to allow lower minimum gain antennas in the 70/80 GHz band without delay. We recommend that the Commission also give due consideration to additional innovative uses of the band in a manner that does not delay implementation of rule modifications for 5G wireless backhaul.

Respectfully submitted,

Nokia

/Brian Hendricks/

Brian Hendricks
Jeffrey Marks
Government Relations

Nokia
1200 G Street, NW
Suite 800
Washington, DC 20005

Prakash Moorut
Fabiano Chaves
Bell Labs & CTO

September 4, 2020

⁷ *Id.* at 5.

⁸ *Id.* at 12 (quoting *NPRM*, ¶ 37).

⁹ *Id.* at 12.