

15 September 2017

VIA EMAIL

Innovation, Science and Economic Development Canada
c/o Senior Director, Spectrum Licensing and Auction Operations
235 Queen Street, 6th Floor
Ottawa, Ontario K1A 0H5

Re: *Consultation on Releasing Millimetre Wave Spectrum to Support 5G, Canada Gazette, Part I, June 17, 2017, Notice No. SLPB-001-17.*

COMMENTS OF 5G AMERICAS

1. 5G Americas, the Voice for 5G and LTE in the Americas, submits these comments in response to the Ministry's *Consultation on Releasing Millimetre Wave Spectrum to Support 5G* ("Consultation") in the above-referenced proceeding. Currently chaired by AT&T Mobility, 5G Americas has a broad membership of leading wireless operators and vendors promoting and facilitating the seamless deployment and widespread adoption of LTE and 5G throughout the Americas.¹ 5G Americas encourages the Ministry of Innovation, Science and Economic Development Canada ("ISED") to repurpose all of the proposed millimetre wave ("mmW") bands under consideration in the above proceeding to support the fifth generation of wireless technology ("5G").

¹ 5G Americas Board of Governor members include America Movil, AT&T, Cable & Wireless, Cisco, CommScope, Entel, Ericsson, HP Enterprise, Intel Corporation, Kathrein, Mitel, Nokia, Qualcomm, Samsung, Sprint, T-Mobile USA, and Telefónica.

I. INTRODUCTION

2. 5G Americas has long promoted internationally harmonized spectrum for wireless service in order to promote the deployment in the Americas of wireless broadband services. 5G Americas works with regulators, technical standards bodies, and other global wireless organizations to promote seamless interoperability and convergence for the benefit of customers. As ISED has noted, internationally harmonized spectrum enables economies of scale and scope that benefit consumers through more innovative and affordable services and applications.² For this reason, 5G Americas has agreed to represent our Region of the Americas in the Global 5G MOU events scheduled biennially as the industry standardizes 5G over the next few years. In 2018, 5G Americas will host the Global 5G MOU Event for the Americas, and has participated in those hosted by other leading 5G wireless associations to date in China, Europe, Japan and soon in South Korea³. 5G Americas' mission to promote the deployment of LTE and 5G throughout our Hemisphere is also manifest in the number of White Papers it prepares and distributes to educate stakeholders on the evolution of the LTE family of technologies, into 5G, and developments impacting the deployment of LTE in the Americas. 5G Americas agrees with ISED that a "robust wireless telecommunications industry drives the adoption and use of digital technologies" and enhances the productivity of an economy and its

² ISED, *Consultation on Releasing Millimetre Wave Spectrum to Support 5G*, *Canada Gazette*, Part I, June 17, 2017, Notice No. SLPB-001-17 ¶ 13 ("Consultation.")

³ Fourth Global 5G Event in Seoul, Korea, on November 22 and 23, 2017; *see* www.5G-ppp.eu

international competitiveness.⁴ For these reasons and other social goods, 5G Americas congratulates ISED on its Consultation, and urges it to make all the spectrum proposed available to support 5G.

Question 4-1: Given the disruptive nature of 5G, will new business models and network applications develop that may require policy and regulatory consideration from ISED? Please describe potential new business models and network applications as well as their benefits to Canadians.

3. As noted above, 5G Americas' mission includes educating regulators and other stakeholders on deployment of 3GPP technologies, like 5G. One of 5G Americas' recent White Papers, *5G Spectrum Recommendations*, addresses what spectrum bands may be optimized for what particular 5G applications, driven by requirements for low latency, coverage or capacity.⁵ 5G Americas has also published White Papers on specific applications that will require policy and regulatory considerations from ISED, such as Cellular V2X on the use of 5G for connected and autonomous vehicles⁶ or the Internet of Things.⁷ All of 5G Americas White Papers are available for free download at www.5GAmericas.org.

Question 5-1: ISED is seeking comments on developing a flexible use licensing model for fixed and mobile services in the 28 GHz and 37-40 GHz frequency bands, and allowing licence-exempt use of the 64-71 GHz frequency band ahead of WRC-19 and before 5G technology standards are finalized.

⁴ See Consultation at ¶ 3.

⁵ See 5G Americas, *5G Spectrum Recommendations* at Table 15, at pp. 24-25, April 2017; see also Ericsson, *5G Business Potential*.

⁶ See 5G Americas, *V2X Cellular Solutions* (October 2016).

⁷ See 5G Americas, *LTE and 5G Technologies Enabling the Internet of Things* (December 2016).

4. 5G Americas applauds ISED's decision to consult on developing a flexible use licensing model for fixed and mobile services in the 28 GHz and 37-40 GHz frequency bands ahead of WRC-19, and before 5G technology standards are completely standardized. 5G Americas notes, as a Market Representation Partner of 3GPP, that 3GPP has decided to move up the targeted date for Non-Stand Alone (NSA) 5G New Radio to March 2018, toward a goal of deploying integrated 4G/5G networks and 5G applications and devices by 2019. Standardization of Stand Alone 5G New Radio (SA 5G NR) will also be moved up, to September 2018. So moving to allow flexible use of the 28 GHz and 37-40 GHz bands before WRC-19, which 5G Americas requests ISED to do, is even more justifiable. Moreover, as the Senior Director is aware, Canada harmonizing with the U.S. on these bands will facilitate a CITEL proposal for Agenda Item 1.13. Action domestically by ISED prior to WRC-19 will better ensure a positive outcome for 5G at the Conference.

Question 6-1: ISED is seeking comments on the changes proposed to introduce flexible use licensing in the 28 GHz band, including consequential changes to the CTFA domestic footnotes and the policy on this band contained in SP 3-30 GHz, [Revisions to Spectrum Utilization Policies in the 3-30 GHz Frequency Range and Further Consultation](#).

5. 5G Americas encourages ISED to introduce flexible use licensing in the 28 GHz band. Having both Canada and the U.S. license flexible broadband use in the band could create a great driver of 5G innovation and deployment. North America has led the world in 4G deployment, in part due to regulatory decisions taken by Canadian and U.S. regulators. This leadership can continue in 5G for applications that can use the 28 GHz band, such as urban densification for enhanced wireless broadband. In the U.S., a number of 5G Americas' members are trialing 5G in 28 GHz.⁸ ISED allowing flexible use of the 28

⁸ AT&T, PRESS RELEASE, *AT&T Launches First 5G Business Customer Trial with Intel and Ericsson*, December 5, 2016, available at

GHz will broaden the North American reach of 5G innovation, to the benefit of Canadian consumers, operators and technology companies.

Question 6-2: ISED is seeking comments on the moratorium for new site-specific fixed service licences as described above.

6. 5G Americas supports a moratorium on new site-specific fixed service licenses in the 28 GHz band, in order to support the deployment of 5G in the band.

Question 6-3: ISED is seeking comments on its proposal to adopt the band plan (as shown in figure 3 above) in the 28 GHz band.

7. 5G Americas supports ISED's proposal for 28 GHz band, namely to create two 425 MHz blocks in the range. 5G Americas believes these larger channelized blocks, pursuant to the same band plan that the U.S.' FCC adopted at 28 GHz, will help support the deployment of 5G in the band.

Question 7-1: ISED is seeking comments on the proposal to implement flexible use licensing in the frequency band 37-40 GHz, including the consequential changes to [CTFA](#) footnote C51, while continuing to allow for fixed-satellite service (space-to-Earth) in the band.

8. 5G Americas supports ISED implementing flexible use licensing in the frequency band 37-40 GHz. A harmonized Canadian-U.S. approach for the band will support economies

http://about.att.com/story/att_launches_first_5g_business_customer_trial_with_intel_and_ericsson.html; Ericsson, PRESS RELEASE, *SoftBank and Ericsson to demonstrate 5G 28 GHz*, March 24, 2017, available at <https://www.ericsson.com/en/press-releases/2017/3/softbank-and-ericsson-to-demonstrate-5g-28ghz>; Qualcomm, PRESS RELEASE, *Qualcomm Showcases 5G Leadership by Announcing its First 5G Modem Solution*, October 17, 2016, available at <https://www.qualcomm.com/news/releases/2016/10/17/qualcomm-showcases-5g-leadership-announcing-its-first-5g-modem-solution>; BusinessWire, PRESS RELEASE, *Samsung to Collaborate with T-Mobile on 5G Mobile Network Technology Demonstrations and Trials*, September 7, 2016, available at <http://www.businesswire.com/news/home/20160907006486/en/Samsung-Collaborate-T-Mobile-5G-Mobile-Network-Technology>.

of scale for 5G applications, and facilitate the development of a CITELE proposal as we head towards WRC-19.

Question 7-2: ISED is seeking comments on whether a moratorium on the issuance of new licences under the [New Licensing Framework for the 24, 28 and 38 GHz Bands and Decision on a Licence Renewal Process for the 24 and 38 GHz Bands](#) is required at this time.

9. 5G Americas supports ISED imposing a moratorium on the issuance of new licenses under the above-captioned pre-existing regulatory framework, in order to encourage investment in the broadband equipment and 5G services that will be deployed under a flexible licensing approach.

Question 7-3: ISED is seeking comments on the proposal to adopt the band plan as shown in figure 7 for the frequency band 37-40 GHz.

10. 5G Americas supports ISED's proposed band plan for the 37-40 GHz band.

Question 9-1: ISED is seeking comments on:

9-1.A. Whether flexible use access in the 28 GHz, 37-40 GHz bands should be exclusively licenced or licence-exempt.

11. 5G Americas supports licensing the 28 GHz and 37-40 GHz bands on an exclusive basis.

9-1.C. Whether a licence-exempt dynamic access using data base should be implemented in all, or portions of the 28 GHz, 37-40 GHz, particularly in the band 37-37.6 GHz.

12. Because 5G Americas supports each of the three mmWave bands being licensed, it does not believe a dynamic access database should be implemented to manage access to these bands.

13. Specifically with respect to the 37-37.6 GHz band, as 5G Americas told the U.S. FCC, a simple frequency coordination framework with proven history is the appropriate building block for the 37.0-37.6 GHz band.⁹ A dynamic access database such as the FCC has adopted to manage spectrum access in the 3550-3700 MHz band is still not a proven baseline. Industry across North America should be allowed to develop a coordination framework in the 37-37.6 GHz band, based on applications stakeholders plan to deploy.¹⁰

14. 3GPP is developing a framework to determine how shared spectrum can be used. Systems in the band should use sharing mechanisms that industry has developed. Alternatively, they can resort to earlier models of direct, manual coordination. Any features or functions added to the existing simple baseline framework should be necessary to serve all co-equal sharing parties, and at reasonable implementation cost. Unnecessary or speculative functions for spectrum sharing mechanisms should be rejected by ISED.

Question 9-2: If an exclusive licensing approach is implemented, preliminary comments are sought on the benefits and risks related to longer licence terms for these frequency bands.

15. 5G Americas supports longer licence terms in order to encourage investment.¹¹ The use case of urban densification, with greater numbers of small cells in millimetre wave bands, will require more backhaul. The large number of small cells necessary to optimize speed

⁹ See 5G Americas, *Comments on Use of Spectrum Bands Above 24 GHz for Mobile Radio Services* to U.S. FCC, GN Docket No. 14-177 at 5 (September 30, 2016); see also 5G Americas, *Petition for Reconsideration* (December 14, 2017).

¹⁰ *Id.*

¹¹ See 5G Americas, *Comments on Commercial Operations in the 3550-3650 MHz Band* to the U.S. FCC at 2, 10-12, WT Docket No. 12-354 (filed July 24, 2017).

and coverage for customers may require more interfacing with local governments initially, until streamlined procedures are agreed. These additional backhaul and regulatory costs necessitate the greater certainty of longer license terms, to encourage operator investment in these bands.

Conclusion

16. The history of international mobile service allocation and identification for IMT shows that when our Region leads, not only do our citizens benefit from new mobile services, but the rest of the world tends to follow in subsequent Conferences and through domestic proceedings. Our citizens will benefit from global economies of scale in millimeter wave equipment if we achieve international harmonization in these higher bands. Mobile users in Canada and the U.S. already have a high propensity to adopt new mobile technologies and digital services at an early stage, and currently show high levels of mobile engagement across emerging use cases.¹² From enhanced mobile broadband, remote telemedicine, artificial intelligence and other smart city applications, North American consumers will be the first beneficiaries of 5G, based on our shared 4G experience. North America not only has the highest penetration of mobile Internet worldwide but also the most advanced technology mix deployed in the market.¹³ 5G Americas encourages ISED to adopt its proposals for licensed use of the 28 GHz and 37-40 GHz bands, before WRC-19, to continue the virtuous cycle of international harmonization and more affordable wireless services. Not only will Canadian users

¹² GSMA, *The Mobile Economy: North America* at 11-12, September 2017.

¹³ *Id.*

benefit, but users throughout our Region will be better situated to reap the productivity gains and connectivity advantages of early 5G deployment.

Respectfully submitted,

A handwritten signature in black ink that reads "Chris Pearson". The signature is written in a cursive, flowing style.

Chris Pearson

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