

September 15, 2017

VIA EMAIL ([ic.spectrumbauctions-encheresduspectre.ic@canada.ca](mailto:ic.spectrumbauctions-encheresduspectre.ic@canada.ca))

Senior Director

Spectrum Licensing and Policy Branch – ISED

235 Queen Street (6th Floor East Tower)

Ottawa, ON K1A 0H5

RE: ***Consultation on Releasing Millimetre Wave Spectrum to Support 5G, SLPB-001-17, June 2017***

Dear Senior Director:

Facebook, Inc. is pleased to submit these comments in response to Innovation, Science, and Economic Development Canada's ("ISED") Consultation on Releasing Millimetre Wave Spectrum to Support 5G. Facebook supports ISED's efforts to foster innovation and investment in wireless technologies and connectivity through making additional millimetre wave band spectrum available. Facebook offers the following comments in response to Consultation **Question 8-1, Question 6-1, and Question 7-1.**

#### **Question 8-1 – Extended 60 GHz Band**

Facebook strongly supports making the 64-71 GHz band available for license-exempt use to extend currently harmonized license-exempt services in the 57-64 GHz band.<sup>1</sup> Having a total of 14GHz of license exempt spectrum will be critical for adoption of technologies based on the latest IEEE 802.11-2016 standard, which defines six 2160MHz channels, including three that require access to spectrum in the 64–71 GHz band.<sup>2</sup>

In particular, Facebook applauds ISED's efforts to streamline the regulations for two group of devices: devices located outdoors, which have higher average EIRP and all other devices, rather than

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<sup>1</sup> See *Consultation on Releasing Millimetre Wave Spectrum to Support 5G, SLPB-001 17, para. 75, (June 2017) available at <http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11298.html>.*

<sup>2</sup> Table E-1, US Operating Class 34, and/or Table E-4, Global Operating Class 180.

using ambiguous language such as “point-to-point” devices or operations.<sup>3</sup> The clear and concise language in Annex J.2.2 will best serve the new and innovative technologies that are currently being developed in the band.

Facebook supports ISSED’s proposal to make 64-71 GHz available on a license-exempt basis on a no-protection, no-interference basis consistent with Annex J.2.2 to define the technical parameters for “devices located outdoors.”

## **Questions 6-1 and 7-1 – mmWave bands for Flexible Use, including HAPS**

As the Senior Director may be aware, Facebook is developing a solar-powered, high-altitude unmanned fixed wing plane to deliver broadband fixed backhaul connectivity, to extend the reach of broadband providers’ network and to lower their cost for backhaul.<sup>4</sup> Accordingly, Facebook supports more spectrum as a general matter being made available for flexible use, including in the 28 GHz and 37-40 GHz bands. As these bands are built out, more users will enjoy high-speed connectivity and broadband providers will have more traffic to backhaul. 5G will create demand for higher broadband speeds and IoT applications in underserved markets. High-altitude solar planes can help broadband providers extend their markets with lower cost backhaul.

The International Telecommunication Union (ITU) is currently studying how to facilitate access to broadband applications delivered from high-altitude platform stations (HAPS) like the unmanned solar plane Facebook is developing.<sup>5</sup> The HAPS agenda item requires the ITU to study possibly modifying the existing identification for HAPS in the 28 GHz band, as well as, if there is not sufficient spectrum in the existing identifications to support broadband HAPS, to study identifying a band within the 37-40 GHz range for HAPS.<sup>6</sup> Facebook has assisted in preparing studies for the ITU-R, which show that HAPS – treated as a fixed terrestrial application at the ITU – can co-exist with mobile, fixed and fixed satellite in these bands.

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<sup>3</sup> See RSS 210, Issue 9 (August 2016), Annex J.2.2 Devices Other Than Fixed Field Disturbance Sensors, (“For devices located outdoors, the average e.i.r.p. of any emission shall not exceed 82 dBm minus 2 dB for every dB for which the antenna gain is less than 51 dBi.”) available at [https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/rss-cnr-210-v9-eng.pdf/\\$file/rss-cnr-210-v9-eng.pdf](https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/rss-cnr-210-v9-eng.pdf/$file/rss-cnr-210-v9-eng.pdf).

<sup>4</sup> See, e.g., <https://www.theguardian.com/technology/2017/jul/02/facebook-drone-aquila-internet-test-flight-arizona>.

<sup>5</sup> See Resolution 160 (WRC-15) available at [https://www.itu.int/dms\\_pub/itu-r/oth/0c/0a/R0C0A00000C0015PDFE.pdf](https://www.itu.int/dms_pub/itu-r/oth/0c/0a/R0C0A00000C0015PDFE.pdf).

<sup>6</sup> Resolution 160 resolves that the ITU-R will study the existing HAPS identification of 27.9-28.2 GHz (paired with 31.0-31.3 GHz), and as appropriate, 38-39.5 GHz. See *id.*

Accordingly, in response to **Questions 6-1** and **7-1**, Facebook supports ISED's proposal to implement flexible use licensing in these bands. Facebook recognizes that identifications for HAPS in the same bands being considered globally for IMT 2020 and domestically by ISED and the FCC for flexible use will create economies of scale in these bands for broadband equipment and devices. Such economies of scale are necessary for broadband providers to affordably integrate HAPS into their networks, to extend their service coverage to underserved areas.

Respectfully submitted by:

*/s/ Christopher Weasler*

Christopher Weasler

**Facebook, Inc.**

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