

Consultation on the Technical and Policy Framework for Radio Local Area Network Devices
Operating in the 5150-5250 MHz Frequency Band

Canada Gazette, Part I, January 28, 2017, Notice No. SMSE-002-17

Reply Comments of the Consumer Technology Association

I. INTRODUCTION

1. The Consumer Technology Association (“CTA”)¹ provides the following reply comments in response to the Innovation, Science and Economic Development Canada (“Department”) *Consultation on the Technical and Policy Framework for Radio Local Area Network Devices Operating in the Band 5150-5250 MHz*, Notice No. SMSE-002-17 (“Consultation”). Consistent with many other commenters in the proceeding,² CTA respectfully urges the Department to proceed expeditiously to harmonize Canada’s technical rules for the 5150-5250 MHz band with those adopted by the Federal Communications Commission in the United States.³
2. As the demand for mobile broadband service continues to grow exponentially, efficient spectrum management policies are increasingly critical to enable service providers to satisfy consumer demand and fuel innovation and economic growth in Canada. Unlicensed spectrum is a key component of meeting the growing demands on both wired and wireless networks, and the 5 GHz band is particularly well-suited for expanded unlicensed operations. Unlicensed operations already exist in the band and already protect incumbent operations while enabling a variety of offerings, including Wi-Fi.

¹ The Consumer Technology Association (“CTA”) is the trade association representing the consumer technology industry. More than 2,200 companies – 80 percent are small businesses and startups; others are among the world’s best known brands – enjoy the benefits of CTA membership, including policy advocacy, market research, technical education, industry promotion, standards development, and the fostering of business and strategic relationships. CTA also owns and produces CES[®] -- the world’s gathering place for all who thrive on the business of consumer technology. Profits from CES are reinvested into CTA’s industry services.

² See, e.g., Comments of Bell Canada; Comments of the Canadian Electronics and Communications Association; Comments of Cisco; Comments of Cogeco Communications; Comments of Ericsson Canada Inc.; Comments of Intel Corporation; Comments of Microsoft Corporation; Comments of Nokia; Comments of the Public Interest Advocacy Centre; Comments of Rogers Communications; Comments of Ruckus Wireless; Comments of Shaw Communications Inc.; Comments of the Telecommunications Industry Association; Comments of Telus Communications Company; Comments of Wi-Fi Alliance.

³ *Revisions of Part 15 of the Commission’s Rules to Permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band*, 29 FCC Rcd 4127 (2014).

3. The Department should enhance the efficiency and effectiveness of the 5150-5250 MHz band by harmonizing the rules for these frequencies with its southern neighbor. Harmonization will promote innovation and development of equipment by increasing economies of scale, and there is no reason to delay such benefits for Canadian consumers until WRC-19. At the same time, the Department can readily ensure that operating rules appropriately protect incumbent licensed operations.

II. RESPONSES TO QUESTIONS SET FORTH IN SMSE-002-17

A. The demand for and benefit, if any, of allowing HPODs in the 5150-5250 MHz frequency band before WRC-19.

4. Given increased consumer dependence on data-intensive applications, expanding demand for higher speeds and better connectivity, and the rapid growth of the Internet of Things, the Department appropriately is exploring ways to address the pressing need for more spectrum and wider bandwidths for mobile services, including allowing higher power and outdoor radio local area network devices (“HPODs”) in the 5150-5250 MHz frequency band before WRC-19.
5. Access to unlicensed spectrum has fostered the development of innovative technologies, such as Bluetooth, ZigBee, Z-Wave, wireless HDMI connections, and the very high speed 802.11ac Wi-Fi, which can enable data transmission at significantly higher throughput speeds using larger channel bandwidths. As Cisco noted in its initial comments, 802.11ac permits channel bandwidths of 80 MHz and 160 MHz, which increases speeds by 117 percent and 333 percent, respectively.⁴ However, Canadian consumers presently have access to few 80 MHz wide channels and no contiguous 160 MHz channels that can be used outdoors. Modifying the technical rules for the 5150-5250 MHz band will allow Canadian consumers to more fully take advantage of the most recent generation of Wi-Fi and its increased throughput speeds.⁵
6. Networks based on unlicensed spectrum, using technologies such as Wi-Fi, are increasingly important to spectrum-constrained service providers as a way to deliver content to customers without increasing demands on licensed wireless networks. Unlicensed spectrum enables data offload which significantly reduces licensed networks’ capacity constraints. In fact, 71 percent of Canada’s mobile data traffic was offloaded in 2016, a number that is expected to grow to 75 percent by 2021.⁶ Without the ability to offload, Canada’s licensed mobile traffic would grow at a compound annual growth rate of 41 percent instead of 36 percent.⁷

⁴ Cisco Comments at 10-11.

⁵ *Id.*

⁶ Cisco, VNI Mobile Forecast Highlights, 2016-2021, Canada, http://www.cisco.com/assets/sol/sp/vni/forecast_highlights_mobile/#~Country (last visited April 14, 2017).

⁷ *Id.*

7. International harmonization is crucial to enabling the most efficient deployment of next generation technology. Many CTA member companies operate on a global scale, which allows Canadian consumers to benefit from innovation both in Canada and across the world. Consistent rules will produce economies of scale in equipment manufacturing, reduce manufacturing costs, and facilitate deployment, resulting in more innovative and better priced products.⁸ Harmonization of the 5150-5250 MHz band with the technical rules adopted by the United States will allow Canadian consumers to make use of devices that have already been developed to work in the band in the United States over the past several years.
8. Given the regulatory changes adopted in the United States, now is an appropriate time to move ahead to permit higher power indoor as well as outdoor unlicensed operations in the band. The Department should not delay these important decisions until after WRC-19.

B. The potential impacts on domestic and foreign satellite systems in the 5150-5250 MHz frequency band of authorizing HPODs use prior to WRC-19 on the basis of a maximum e.i.r.p of 4 W. Requirements for an elevation mask towards satellite systems and an exclusion zone of 25 km around receiving earth stations to protect all satellite systems would likely also apply.

9. The United States and Canada have similar incumbent licensed satellite uplink systems in the 5150-5250 MHz band.⁹ Unlicensed outdoor operations have been permitted in the United States for nearly three years, and CTA is not aware of any interference complaints from incumbents. Authorizing HPODs in Canada with the same technical requirements as adopted in the United States would similarly protect domestic and foreign satellite systems from harmful interference.
10. CTA also recognizes the need to protect the Canadian Space Agency and Department of National Defence satellite earth station.¹⁰ The Department suggests that exclusion zones would be implemented to protect the existing satellite earth station as well as future satellite earth stations, and that a Department study indicates a 25 km exclusion zone could be sufficient to protect the existing station.¹¹
11. In considering the proposed 25 km exclusion zone surrounding the existing earth station, the Department should take into account the population within the exclusion zone and ensure that the exclusion zone size is as small as necessary to protect satellite operations. If additional earth stations are deployed in the future, steps should be taken to ensure the population impacted as a result of any exclusion zone is as limited as possible.

⁸ Consultation at 2.

⁹ See Comments of Intel Corporation at 2; Comments of Nokia at 2-3.

¹⁰ Consultation at 4.

¹¹ *Id.*

C. Should the Department proceed to authorize HPODs use prior to WRC-19, what regulatory approach would best ensure a balance of timely deployment and the protection of other existing and future services in the 5150-5250 MHz frequency band? Also, indicate any and all considerations that should be given to equipment standards, technical requirements, eligibility criteria and/or conditions of licence depending on the relevant approach.

12. The Department should move quickly to authorize HPODs prior to WRC-19 following the approach taken in the United States.
13. Specifically, the Department should allow both indoor and outdoor access points to operate up to 1 W conducted power at up to 6 dBi antenna gain, with higher antenna gains permitted with a corresponding reduction in conducted power. The EIRP for outdoor access points in directions with elevation angles above 30 degrees would be no greater than 125 mW. Client devices would be permitted to operate at up to 250 mW conducted power at up to 6 dBi antenna gain.¹²
14. To ensure the Department is able to address any reports of interference from incumbents should they arise, the Department could require notification of deployments consisting of more than 1,000 access points. This is consistent with the approach taken in the United States.¹³
15. The Department should not require licences in the band. Other than operating rules designed to protect licensed incumbent users, the Department should not restrict the types of services or technology that may be deployed within the band or the users that may operate in the band. Technological mandates or use restrictions would hamper innovation. Allowing flexibility in the band instead will allow market forces to shape the development of equipment and services in the band going forward.

III. CONCLUSION

16. CTA's members are working diligently to ensure that the ever-increasing consumer demand for high-speed wireless connectivity is met through new products and services. The 5150-5250 MHz band holds promise as a part of the solution to meeting that demand, and CTA urges the Department to take advantage of this opportunity by harmonizing its rules with the United States approach as expeditiously as possible.

¹² See 47 C.F.R. § 15.407(a)(1); *Revisions of Part 15 of the Commission's Rules to Permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band*, 29 FCC Rcd 4127 (2014).

¹³ *Id.*

Respectfully Submitted,

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