



Innovation, Science and Economic Development Canada

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

**Reply Comments of the
Public Interest Advocacy Centre**

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1. **Unlicensed Spectrum Would Promote Broadband Access**

1. The Public Interest Advocacy Centre (**PIAC**) is pleased to provide Innovation, Science and Economic Development Canada (the “**Department**”) with its reply comments on the *Consultation on the Technical and Policy Framework for Radio Local Area Network Devices Operating in the 5150-5250 MHz Frequency Band*.¹
2. In PIAC’s view, ensuring all Canadians have access to affordable telecommunications services – and notably affordable broadband – is critical as more essential services, including government services, must be accessed online. As noted in our original submission, PIAC believes granting more flexible use of the 5150-5250 MHz frequency band, in particular for Wi-Fi, would help facilitate access to the internet and could be beneficial for all Canadian consumers.
3. PIAC also notes the concerns expressed by CanWISP, ABC Communications and other fixed wireless internet service providers (ISPs) which have said there is a vital need for more unlicensed spectrum in order to alleviate congestion they encounter in providing backhaul and last-mile service to rural communities.² Fixed wireless providers also tend to be smaller ISPs which are unable to support the cost of licensed point-to-point microwave frequencies. Greater use of unlicensed spectrum generally will also grow as all broadband service providers strive to meet the CRTC’s recently established universal service goals of a 50 Mbps download speed, 10 Mbps upload speed, and an unlimited data allowance option.³
4. Therefore, PIAC submits unlicensed spectrum could be employed for various uses including the key goal of connecting all Canadians to internet access service. PIAC believes there is both the need and demand for intensive use of broadband which must be met. More flexible use of the 5150-5250 MHz band would be a means of accomplishing this.
5. Parties which oppose outdoor and higher power use of 5150-5250 MHz spectrum raise two key issues: harmful interference and waiting until WRC-19 in order to determine appropriate use of the band. PIAC will address both issues here, and re-emphasize the appropriateness of a “light” licensing regime.

¹ Innovation, Science and Economic Development Canada, *Consultation on the Technical and Policy Framework for Radio Local Area Network Devices Operating in the Band 5150-5250 MHz* (January 2017), SMSE-002-17, online: ISED <[https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/SMSE-002-17-consultation-5150.pdf/\\$FILE/SMSE-002-17-consultation-5150.pdf](https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/SMSE-002-17-consultation-5150.pdf/$FILE/SMSE-002-17-consultation-5150.pdf)>. **[Consultation Paper]**

² See, for instance submissions made by CanWISP (29 March 2017) at para 11, and ABC Communications (24 March 2017) at paras 12-16.

³ Telecom Regulatory Policy CRTC 2016-496 at paras 80 and 97.

2. Harmful Interference & Competing Demands

6. Some parties are concerned about interference from HPODs which could affect the activities they carry out. These activities include earth observation, Radarsat data collection, and civil aviation. Parties which expressed particular concern about harmful interference include Globalstar, the Canadian Space Agency, Environment and Climate Change Canada, NAV Canada and Transport Canada. All of these parties, except Globalstar, represent stakeholders who currently operate in frequency bands adjacent to the 5150-5250 MHz band.
7. PIAC recognizes the potential harm which interference could create on a number of industries and public agencies. However, to PIAC's knowledge no party has recommended (concerning the 5150-5250 MHz band, not other bands) operating HPODs in a manner which would interfere with any other operators in the same or adjacent frequency bands. All parties in favour of permitting the deployment of HPODs appear to be willing to respect the technical rules which would be established by the Department in order to prevent harmful interference.
8. PIAC notes, in regards to the Canadian Space Agency for instance, the Department has already proposed an absolute 25 km exclusion zone in Canada's capital. This is, in PIAC's view, even now an extreme measure proposed to protect Canada's satellite earth station. In regards to Globalstar, the main party which does operate within the 5150-5250 MHz spectrum band, it has not shown on the record that the technical rules created by the FCC have been insufficient in protecting its satellite operating system in the U.S.
9. Therefore, in order to meet the growing demand for Wi-Fi and other uses of unlicensed spectrum, in PIAC's view, the most constructive and comprehensive solution to harmful interference would be: the establishment of technical preventative measures, and the effective enforcement of those measures. PIAC submits the administrative licensing regime we and other parties have proposed would be an appropriate and effective tool for ensuring compliance with the Department's final policy.
10. PIAC believes many individual Canadians are likely unaware of the Department's spectrum use policies. Therefore, in regard to potential "rogue" users which may be more difficult to "shut down",⁴ those who operate RLANs by unlawful means within a band are likely to do so regardless of the Department's permission or not. That is a separate issue from the lawful use of spectrum by commercial operators and other users which respect the Department's rules.

⁴ The Canadian Space Agency, for instance, makes a reference to the "point of no return." See: Submission of Canadian Space Agency (29 March 2017) at p. 3.

11. Regarding future use of the 5150-5250 MHz band by other operators, PIAC only noted the possibility expressed by Transport Canada and NAV Canada that the band may be considered for communications infrastructure used to support unmanned aircraft systems (UAS).⁵ However, the International Civil Aviation Organization's Unmanned Aircraft Systems Study Group has been examining unmanned air vehicles since 2007 and does not appear to be close to making an official determination on the appropriate frequency allocations for UAS. Furthermore, public documents which have described spectrum needs for UAS have not yet mentioned the 5150-5250 MHz bands, focusing on other bands such as the 5091-5150 MHz and 1.5-1.6 GHz frequency bands.⁶ UAS spectrum has also not been included as an agenda item for WRC-19.
12. Therefore, it would be unreasonable to prohibit HPODs – when indoor RLANs already operate in this band – because of a possibility this band may be used for UAS in the long term. As mentioned earlier, measures to prevent harmful interference could and should be established and reviewed in the future as new potential uses of the 5150-5250 MHz band arise.
13. Finally, PIAC notes that other parties including Cisco, Ericsson, Microsoft, Intel, the IEEE 802 LAN/MAN Standards Committee, the Wi-Fi Alliance, Cogeco, TELUS and Shaw have equally voiced concerns over the exclusion zone in the Ottawa area proposed in the Department's Consultation Paper, particularly due to the high population density of the area covered by the zone. Specifically, there appears to be little information as to how the Department determined that criteria, or whether any other possible alternatives have been considered. PIAC agrees that greater detail and further examination is needed surrounding this proposal.

3. WRC-19

14. Some parties have also suggested the Department should wait until after WRC-19 to issue a final decision. WRC-19, including the results of the ITU's technical

⁵ Submissions of NAV Canada (28 March 2017) at pp. 1-2, and Transport Canada (14 March 2017) at p. 1.

⁶ See, for instance: Loftur Jónasson, "Global Aviation: Not Your Average Spectrum User," online: ITU <http://www.itu.int/net/newsroom/wrc/2012/features/aviation_icao.aspx> (accessed 11 April 2017); and

International Civil Aviation Organization, *Satellite Spectrum to Support the Safe Operation of Unmanned Aircraft Systems* (2012), online: ITU <<https://www.itu.int/net/ITU-R/study-groups/docs/workshop-wp5abc-wrc15/WP5ABC-WRC15-P2-2.pdf>>.

studies, intends to examine wireless access system in the entire 5150-5925 MHz band.⁷

15. Although PIAC would not be strongly opposed to waiting until after WRC-19 to issue a final policy framework on HPODs in the 5150-5250 MHz band, we believe allowing HPOD use soon – with the appropriate technical measures in place – would be beneficial for consumer access to affordable high-speed internet in both urban and rural areas. While the need for more outdoor unlicensed spectrum has been expressed on the record, particularly by rural ISPs, parties which have opposed this flexibility have not demonstrated HPODs operating within technical restrictions would create harmful interference.
16. PIAC also notes RLANs already operate in the 5150-5250 MHz band. Therefore, the issue here is not the reassignment of a particular band but the appropriate technical requirements which should be imposed on RLANs.
17. Finally, allowing HPOD use in the 5150-5250 MHz band prior to WRC-19 would give the Department firsthand knowledge and experience in preparation for the WRC-19 conferences. As noted in PIAC's first submission, in the case where the ITU ultimately issues a resolution which differs from the Canadian regime, the Department would be free to review and amend Canada's framework where appropriate. This should be particularly straightforward where, as proposed in PIAC's initial comments, the Department has implemented a licensing regime for HPODs.

4. Licensing Regime

18. Some parties have promoted the establishment of a licence-exempt HPOD regime similar to that in the U.S.
19. However, given the uncertainty regarding the deployment of HPODs should they be permitted and potential cases of interference, PIAC is inclined to agree with parties such as Transport Canada which have submitted that a licensing regime would be appropriate. In PIAC's view, an administrative licensing regime would allow the Department to impose conditions on licensees and effectively enforce the Department's rules, where necessary, in cases of non-compliance. The Department would also have the authority to amend licences where needed, for instance, following WRC-19.

⁷ International Telecommunication Union, *World Radiocommunication Conference 2019: Agenda and Relevant Resolutions*, item 1.16.

20. PIAC is particularly concerned about monitoring large operators of a significant number of HPODs. We would therefore not be opposed to exempting smaller HPOD operators from the requirement to obtain a licence (although smaller operators would, of course, equally be required to comply with the Department's technical rules).
21. In addition, PIAC notes that some service provider parties such as Shaw, Cogeco, CanWISP and ABC Communications also do not object to a "light" licensing approach, provided it is not administratively burdensome and permits HPOD deployment prior to 2020.

5. Conclusion

22. In sum, based on the evidence on the record of this consultation, PIAC's position is that the Department can and should move forward to allow the use and deployment of HPODs in the 5150-5250 MHz band.
23. Concerns which have been raised regarding interference would be better addressed through an all-encompassing solution which would establish effective technical criteria to prevent harmful interference with other operators in the 5150-5250 MHz and adjacent bands. These concerns, which have to date been resolved in the U.S., should not preclude the Department from permitting the use of HPODs at all.
24. Rather, the record shows there is demand and need for more flexible use of unlicensed spectrum in order to connect Canadians to affordable broadband internet access. Today, access to high-speed internet service is already essential – both for Canadian families and for promoting economic growth and innovation throughout the country.

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