

CANADA GAZETTE NOTICE NO. SLPB-006-17

**CONSULTATION
ON THE SPECTRUM OUTLOOK 2018 TO 2022**

**PUBLISHED IN THE *CANADA GAZETTE, PART I*
ON 21 OCTOBER 2017**

**REPLY COMMENTS
OF
BELL MOBILITY INC.**

16 MARCH 2018

Table of Contents

	<u>Page</u>
1.0 INTRODUCTION	3
2.0 LICENSING FRAMEWORK	4
2.1 Open Auctions	4
2.2 Licence Areas	5
2.3 Licence Terms	5
2.4 Deployment Requirements.....	6
2.5 Flexible Use	6
2.6 Small Cell Deployment.....	7
2.7 Opportunistic and Dynamic Access.....	8
2.8 Mandatory Roaming.....	9
3.0 LICENCE-EXEMPT	10
4.0 SATELLITE	10
4.1 Additional Satellite Comments	12
5.0 BACKHAUL	13
6.0 POTENTIAL FREQUENCY BANDS FOR FUTURE RELEASE	13
6.1 3500 MHz	13
6.2 mmWave and 600 MHz.....	15
6.3 4400-5000 MHz	16
6.4 37-43.5 GHz	16
6.5 47.2-48.2 GHz	16
6.6 1500 and 1600 MHz Paired Spectrum	17
6.7 5925-7125 MHz (6 GHz)	17
7.0 CONCLUSION	17

1.0 **INTRODUCTION**

1. In accordance with the procedure set out by Innovation, Science and Economic Development Canada (the Department or ISED) in Notice No. SLPB-006-17, *Consultation on the Spectrum Outlook 2018 to 2022* (the Consultation), dated 6 October 2017, we are pleased to submit our Reply Comments on the overall approach and planning activities related to the release of spectrum for commercial mobile services, licence-exempt applications, satellite services and wireless backhaul services over the next five years.

2. We support the Department's commitment to assigning licences through auction. While some commenters argued for the continued use of market intrusive measures such as set-asides and caps, we believe that these measures are unnecessary. Regional providers such as QMI, Shaw and Eastlink are able to compete for the spectrum they require as they are large, well-capitalized incumbent cable companies. The Department should support a market-based approach to spectrum allocation as indicated in the *Spectrum Policy Framework for Canada*.¹ Market forces, in short, will ensure that those willing and able to put the spectrum to its best use will bid for and acquire it. A market-based approach to spectrum allocations will also ensure that the Government garners the highest possible value for the spectrum it administers on behalf of Canadians.

3. Moreover, the Department should also resist calls for smaller geographic regions, shorter licence term length, and more onerous deployment conditions. The current licensing regime has successfully allowed wireless carriers to extend high quality service to more than 99% of all Canadians.

4. We recognize that there may be a requirement for additional licence-exempt spectrum, but we reiterate that licence-exempt channels in lower frequencies should only be allocated on an exceptional basis in spectrum bands that will not be required for licensed use. While some commenters advocated allocating 5925-7125 MHz (6 GHz) for licensed-exempt use, we generally support flexible use licensing in this band, and suggest ISED await the outcomes of the U.S. and other international consultations on this band before making a final determination.

¹ Industry Canada, *Spectrum Policy Framework for Canada*, June 2007, available at <http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf08776.html#s44>.

5. There was widespread support for the expansion of the 3500 MHz band into C-band spectrum (3700-4200 MHz). We understand that the Department must balance the needs of satellite operators against those of the commercial mobile community, and believe that moving satellite users into the upper part of the C-Band (3800 – 4200 MHz) is an appropriate solution in the short term.

6. Regardless of the timing and chosen range of the 3500 MHz band expansion, it is imperative the Department allow current licence holders to use their 3500 MHz spectrum for mobile use as soon as possible. Permitting incumbents to immediately deploy mobile 5G services would lay the groundwork for Canada's 5G infrastructure and allow Canada to keep up with global developments.

2.0 LICENSING FRAMEWORK

2.1 Open Auctions

7. We support the Department's commitment to assigning licences through auction. Shaw, Cogeco, Eastern Ontario Regional Network (EORN) and CanWISP argued for the continued use of market intrusive measures such as set asides and caps in future spectrum auctions.² Cogeco claimed these measures are important "to limit the overwhelming control position of incumbent MNOs."³ We disagree. Regional providers are able to compete for the spectrum they require as they are large, well-capitalized incumbent cable companies. The Department should support a market-based approach to spectrum allocation as indicated in the *Spectrum Policy Framework for Canada's* enabling guidelines (a) and (d) which state that market forces should be relied upon to the maximum extent feasible, and regulatory measures, where required, should be minimally intrusive, efficient and effective, respectively.⁴ Market forces, in short, will ensure that those willing and able to put the spectrum to its best use will bid for and acquire it. A market-based approach to spectrum allocations will also ensure that the Government garners the highest possible value for the spectrum it administers on behalf of Canadians.

² Shaw Comments, paragraph 15; Cogeco Comments, paragraph 14; EORN Comments, paragraph 14; and CanWISP Comments, page 5.

³ Cogeco Comments, paragraph 14.

⁴ Industry Canada, *Spectrum Policy Framework for Canada*, June 2007, available at <http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf08776.html#s44>.

8. Set-asides are a costly and unnecessary policy tool. As stated by Rogers, by artificially inflating spectrum prices, set-asides are "bad for the Canadian economy, the wireless industry, and for consumers and businesses, the end users who ultimately pay for the high spectrum costs."⁵ Further, expensive measures such as set-asides are unnecessary given the amount of spectrum regional providers have already acquired. As Telus demonstrated, in the case of the 600 MHz auction, the proposed set-aside would "grossly overprovision regional operators on average with low band spectrum."⁶ Given that current spectrum holdings significantly favour the regional operators when taken as a ratio of MHz to subscribers, it is time for the Department to return to its use of open auctions governed by market forces. Market forces will ensure that those willing to put the spectrum to its best use will bid for and acquire spectrum.

2.2 Licence Areas

9. Several commenters called for licence areas that are more granular than Tier 4.⁷ We, however, continue to support the current definition of service areas for competitive licensing, and generally recommend licensing on a Tier 1 to Tier 3 basis. The current approach has successfully allowed wireless carriers to extend high quality service to more than 99% of Canadians. Smaller licensing areas would increase interference issues and, as a result, decrease the usable spectrum within tier border areas. In addition, larger licence areas allow licensees to manage their network growth. Thus, larger licence areas maximize the benefits to Canadians of the spectrum being licenced.

2.3 Licence Terms

10. We support 20-year licence terms with a high expectation of renewal. Only Corridor Communications Inc. (CCI)⁸ and Dr. Taylor⁹ expressed a preference for shorter licence terms. Long-term, or indeed indefinite, licence terms are appropriate in consideration of the very significant investments required by carriers to deploy spectrum, the need to coordinate with international standards bodies and equipment manufacturers, and the technology lifecycles

⁵ Rogers Comments, paragraph 20.

⁶ Telus Comments, paragraph 25.

⁷ Sogetel Comments, paragraph 32; BCBA Comments, paragraph 16; CCSA Comments, paragraph 13; Seaside Comments, page 7; and CanWISP Comments, page 4.

⁸ CCI Comments, page 3.

⁹ Dr. G. Taylor Comments, paragraph 4.

common in the wireless industry. Thus, we agree with the Department that "licence terms in excess of 10 years [create a] greater incentive to invest in the telecommunications industry and for the industry itself to further invest in the development of network infrastructure, technologies and innovation."¹⁰

2.4 Deployment Requirements

11. Several commenters advocated for expanding deployment requirements in some form.¹¹ We believe that additional deployment regulations would be unnecessarily restrictive. As indicated in the *Spectrum Policy Framework for Canada*, market forces should be relied upon to the maximum extent feasible.¹² Wireless providers that have acquired spectrum in an open auction should be able to determine their network deployment plans as they are best placed to assess and react to market conditions, such as service demand and network deployment costs.

12. In cases where market forces were not relied upon to assign spectrum, i.e., where spectrum was acquired as a result of set-asides or other market intrusive measures, we would support the introduction of stronger deployment requirements. Instituting stronger deployment requirements in these cases would support facilities-based competition and ensure that spectrum acquired through regulatory fiat is not "warehoused" or acquired as a speculative investment.

2.5 Flexible Use

13. Commenters generally supported the use of flexible licensing. As Rogers explained, flexible use licences will "enable new 5G and other connectivity technologies" and "help bring Canada to the forefront of digital development and adoption."¹³ We believe flexible licences should be used wherever technically practical. Such an approach will ensure that spectrum users are able to quickly adapt to market dynamics and technological advancements.

¹⁰ SLPB-001-17, *Consultation on Releasing Millimetre Wave Spectrum to Support 5G*, June 2017, paragraph 92.

¹¹ CCI Comments, page 3; Seaside Comments, page 7; CCSA Comments, paragraph 16; EORN Comments, paragraph 15; Cogeco Comments, paragraph 7; Xplornet Comments, paragraph 12; and CanWISP Comments, page 4.

¹² *Spectrum Policy Framework for Canada*, Enabling Guidelines item (a).

¹³ Rogers Comments, paragraph 10.

14. Seaside Wireless and CanWISP argued that the Department should dedicate specific spectrum to fixed wireless services in rural areas.¹⁴ Flexible use would permit operators to provide fixed wireless services while also allowing the flexibility to adapt to the coming mobile 5G ecosystem. As Xplornet argued, "supporting networks to allow the latest technologies to be deployed will require a flexible approach because the technologies deployed and the way the technologies are deployed may not be the same in all areas of the country."¹⁵ We therefore urge the Department to reject these requests and apply flexible licences to all bands released.

15. As we elaborate below, there is no need for dedicated backhaul spectrum in the mmWave range as proposed by Rogers.¹⁶ It would be more efficient to release all mmWave spectrum with flexible licences, which would allow those who need additional backhaul capacity to use it for that purpose.

2.6 Small Cell Deployment

16. Both Shaw¹⁷ and Rogers¹⁸ called on the Department to streamline the regulatory process and resolve infrastructure access issues to allow mobile operators to deploy small cell wireless infrastructure. ISED is the correct regulatory body to take the lead on resolving any issues¹⁹, and we encourage the Department to take action to facilitate small cell deployment or risk stalling Canada's 5G build-out. One way to move forward would be to institute exclusions to tower siting procedures for small cell deployment. This could include taking measures that would apply to telecommunications carriers, such as:

- New antenna systems: Creating an exclusion when the height is less than eight metres above ground level and the supporting structure is equal to or smaller than the typical width of a telephone pole.
- Existing Antenna Systems: Modifying the exclusion to include modifications made by carriers such as adding antennas or replacing towers, including to facilitate sharing, provided that the total cumulative height increase is no greater

¹⁴ Seaside Comments, page 4; and CanWISP Nordicity Report, page 47.

¹⁵ Xplornet Comments, page 5.

¹⁶ Rogers Comments, paragraph 216.

¹⁷ Shaw Comments, paragraph 50.

¹⁸ Rogers Comments, paragraph 16.

¹⁹ Industry Canada, *Client Procedures Circular CPC-2-0-03*, June 2014, available at

<http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf08777.html#sec6>.

than 25% of the height of the initial antenna system installation, the total height does not exceed 12 metres, and the structure is similar in impact to that of a typical telephone pole.

2.7 Opportunistic and Dynamic Access

17. We encourage the Department to exercise caution when exploring spectrum sharing through opportunistic or dynamic spectrum access and other database-type tools. These technologies are untested, and there may be significant technical issues to resolve before they can be used on a commercial basis. Most commenters, including Rogers, SaskTel, QMI, Cogeco, Shaw, BCBA, and Xplornet, held a similar view.²⁰ We believe that commercial mobile operators will continue to depend on dedicated licenced spectrum to develop their networks.

18. From a process perspective, mandating opportunistic access to spectrum represents a fundamental shift in spectrum policy and should therefore be considered on a stand-alone basis. A fulsome, subject-specific consultation would be a more appropriate approach to consider the benefits and risks of this emerging capability. Moreover, if the Department decides to mandate opportunistic access, it would be patently unfair for the Department to impose such a requirement on existing licensees, after an auction has occurred. Companies who invest millions or, in some cases, billions of dollars deploying spectrum must clearly understand all of their rights and obligations upfront.

19. Although commenters like CanWISP, Dynamic Spectrum Alliance, Telerad, and Fontur supported introducing a spectrum-sharing regime similar to that of the CBRS band in the U.S.²¹, we strongly oppose such a move. As Telus noted in their comments, the CBRS band was developed without any consideration for 5G, and the band's highly restrictive geographic rules and power limitations make it "inherently incompatible with the 3rd Generation Partnership Project (3GPP) ecosystems ... being developed for 5G-NR."²² Rogers also emphasized that the Canadian and U.S. spectrum environments are "materially different" at 3500 MHz, and that

²⁰ Rogers Comments, paragraph 25; SaskTel Comments, paragraph 9; QMI Comments, paragraphs 8 to 13; Cogeco Comments, paragraph 30; Shaw Comments, paragraph 57; BCBA Comments, paragraph 21; and Xplornet Comments, page 10.

²¹ CanWISP Nordicity Report, page 29; Dynamic Spectrum Alliance, page 2; Telerad Comments, page 1; and Fontur Comments, page 4.

²² Telus Comments, paragraph 123.

implementing CBRS would inhibit the opportunity to provide wide contiguous channels for commercial mobile use in this band.²³ CBRS is wholly unsuitable for application in Canada, and we encourage the Department to reject the adoption of similar approaches.

2.8 Mandatory Roaming

20. We have previously recommended the removal of the condition of licence (CoL) related to mandatory roaming. It is a duplicative policy in light of the Commission's decision to mandate the provision, and regulate the rates, of GSM-based wholesale roaming services provided by us, Rogers and Telus to all other wireless carriers.²⁴ In this consultation, Telus supported our view that the mandatory roaming CoL is no longer required:

TELUS supports ISED's acknowledgment of the need for a review of mandatory roaming. TELUS asks that any future review take into account the overarching policy that demands spectrum be put to use and the fact that the CRTC has imposed tariffed roaming, thereby rendering the mandatory COL as potentially redundant and unnecessary.²⁵

21. A mandatory roaming CoL, which requires national wireless carriers to provide roaming to other national wireless carriers, is unnecessary. As the Commission concluded in TRP 2015-177 after examining the competitiveness of the wireless market, the provision of wholesale roaming by us, Rogers, and Telus to each other is subject to a level of competition that is sufficient to protect the interests of users.²⁶ As such, the Commission continues to forbear from the regulation of these services.

22. More generally, a mandatory roaming CoL is at odds with the principles of facilities-based competition and creating incentives to invest in network infrastructure. As explained in our Comments on the AWS-1 Licence Renewal Process consultation, the mandatory roaming CoL creates an opportunity for network arbitrage whereby one carrier can make the strategic decision not to invest in or upgrade its own network in favour of roaming on one or more of its competitors' networks.²⁷ In consideration of the above points, we recommend that the

²³ Rogers Comments, paragraphs 186 and 187.

²⁴ Telecom Regulatory Policy CRTC 2015-177, *Regulatory framework for wholesale mobile wireless services* (TRP 2015-117), paragraph 128.

²⁵ Telus Comments, paragraph 45.

²⁶ TRP 2015-177, paragraph 127.

²⁷ SLPB-002-17, *Comments received on Consultation on a Licence Renewal Process for Advanced Wireless Services and other Spectrum*, Bell Mobility Comments, section 7.3.

Department review the policy with respect to mandatory roaming and eliminate the requirement that national wireless carriers must provide roaming to one another. The mandatory roaming CoL should be removed. Roaming can always be commercially negotiated, and should not be subject to an arbitration obligation if the parties fail to reach a commercial agreement.

3.0 LICENCE-EXEMPT

23. While we support the expansion of licence-exempt spectrum, we believe it is in the public interest that only bands not required for licenced commercial mobile use should be made available as licence-exempt. As Telus observed in their submission, traffic growth projections for Wi-Fi spectrum may be high, but growth for commercial mobile spectrum will be several magnitudes higher.²⁸ Huawei predicted that while unlicensed spectrum will play a role in the development of IoT technologies, the bulk of the traffic will ultimately require licensed spectrum:

It is also expected that there will be significant growth in machine and IoT type communications services. While these may be initially trialed in the "unlicensed" bands, these services require quality of service guarantees that go well beyond what is available in the current ISM unlicensed models.²⁹

24. While additional licence-exempt spectrum may be needed, the Department should prioritize commercial mobile use before allocating further spectrum for licence-exempt use.

25. Shaw, Cisco, Microsoft, Facebook, and the Wi-Fi Alliance all supported expanding licence-exempt spectrum into the 6 GHz band (5925-7125 MHz).³⁰ Telus and Rogers, however, suggested that the band would be suitable for licensed flexible use.³¹ We generally support flexible use licensing in this band, but suggest the Department wait for the outcomes of the U.S. and other international consultations on this band before making a final determination.

4.0 SATELLITE

26. Commenters generally agreed with the Department's assessment that overall demand for C-band applications in Canada will decrease over the next five years. Some satellite

²⁸ Telus Comments, paragraph 71.

²⁹ Huawei Comments, page 6.

³⁰ Shaw Comments, paragraph 81; Cisco Comments, paragraph 5; Facebook Comments, page 5; Microsoft Comments, page 8; and Wi-Fi Alliance Comments, page 7.

³¹ Telus Comments, paragraph 185; and Rogers Comments, paragraphs 240 to 243.

operators, however, asserted that C-band demand would remain constant, or even increase. For example, Telesat noted that "C-band use is expected to continue to grow over the period covered by the Consultation Document,"³² and Intelsat³³ and the CBC³⁴ both stated that demand would remain stable. Despite these assertions, no evidence was provided to counter the two studies cited in the Consultation showing that C-band demand will decrease. In addition, we note that much of the demand forecast by satellite operators was not Canada-specific, but based on international or U.S.-centric projections.³⁵ We therefore support the Department's conclusion that there will be a surplus of C-band capacity over the next five years.

27. Given this anticipated surplus of satellite spectrum, all wireless carriers, Cogeco, Nokia, and Qualcomm urged the Department to repurpose C-band spectrum for commercial mobile use as part of the 3500 MHz band expansion.³⁶ To support this proposal, many commenters noted that other countries are moving towards designating 3400-4200 MHz for commercial mobile use. For example, Cogeco observed: "[T]here is a worldwide trend to reallocate the C-band to be used for 5G and FWA services ... Cogeco encourages ISED to do the same by allocating the C-band for 5G."³⁷ BCBA and CanWISP also highlighted the suitability of this spectrum for fixed wireless in rural areas³⁸, but we note that flexible licensing would allow operators the flexibility to deploy the spectrum for fixed or mobile applications.

28. Several commenters provided inputs on the process for repurposing this spectrum, with current users of C-band satellite spectrum noting their concern with a potential reallocation. SES, Telesat and CBC all cautioned that existing licensees would require protection if mobile use was allowed in the band.³⁹ Telus proposed repurposing C-band in a multiphase process in which the Department would first release 400 MHz for mobile use, and subsequently reallocate the entire band.⁴⁰ Rogers argued that the vast majority of current C-band usage occurs in rural

³² Telesat Comments, paragraph 4.

³³ Intelsat Comments, page 4.

³⁴ CBC Comments, paragraph 19.

³⁵ See: Hughes Comments, paragraphs. 6, 8, and 10; Intelsat Comments, pages 3 and 4; and Iridium Comments, paragraphs 10 and 11.

³⁶ Telus Comments, paragraph 125; Rogers Comments, paragraph 125; Shaw Comments, paragraph 35; SaskTel Comments, paragraphs 102 and 103; Xplornet Comments, page 16; Cogeco Comments, paragraph 51; Nokia Comments, page 5; and Qualcomm Comments, page 3.

³⁷ Cogeco Comments, paragraph 50.

³⁸ BCBA Comments, paragraph 32 and CanWISP Comments, page 12.

³⁹ SES Comments, pages 4 and 5; Telesat Comments, paragraph 5; and CBC Comments, paragraph 18.

⁴⁰ Telus Comments, paragraphs 118 to 127.

areas, and suggested that the entire band should be repurposed, beginning with urban areas.⁴¹ As we noted in our Comments, there may be an opportunity to explore the use of geographic exclusion zones in the larger band of 3400 – 4200 MHz to allow for both mobile and satellite use.

29. We understand that although C-band demand is declining, satellite operators have an ongoing need for sufficient C-band spectrum to sustain their operations. However, we believe that our proposal to consolidate existing and future C-band satellite services into the upper portion of the band (specifically 3800-4200 MHz) is a reasonable solution in the short term that would free an additional 100 MHz of spectrum for flexible use from 3700 to 3800 MHz right away. This would allow rapid access for flexible fixed and mobile use in the lower part of the band (3400-3800 MHz), which will be crucial for the early deployment of 5G technologies and services. As Telus⁴² observed, releasing 400 MHz of spectrum would allow for the creation of four 100 MHz licence blocks, which will maximize spectrum efficiency, spectrum utilization, device-processing power and energy utilization.

4.1 Additional Satellite Comments

30. Both Telesat and SES requested that the 24.25-27.5 GHz band allow continued fixed satellite service use, with SES arguing this should be on a co-primary basis.⁴³ We disagree with this proposal. Further, as this spectrum range is one of the key bands currently being studied by ITU-R Task Group 5/1 as part of WRC-19 Agenda Item 1.13⁴⁴, we believe that the Department should wait for the outcome of the ongoing compatibility and sharing studies for the band before making any decisions. In addition, Telesat, Hughes and SES all indicated that satellite operators would need additional spectrum to satisfy traffic demand, and requested that the Department allocate V-band (40-75 GHz) spectrum for satellite use.⁴⁵ While we recognize that traffic demands may prompt the Department to allocate additional spectrum for satellite use, most of the spectrum in the V-band is currently allocated to mobile use. The Department should carefully weigh the needs of existing users before reallocating this spectrum. While we

⁴¹ Rogers Comments, paragraph 127.

⁴² Telus Comments, paragraph 125.

⁴³ Telesat Comments, paragraph 40 and SES Comments, page 5.

⁴⁴ https://www.itu.int/dms_pub/itu-r/oth/0a/06/ROA0600006C0001PDFE.pdf.

⁴⁵ Telesat Comments, paragraph 7; Hughes Comments, paragraph 3; and SES Comments, page 5.

recognize the needs of satellite operators to meet traffic demands, we urge the Department to prioritize commercial mobile use in the 5G bands being considered for release.

5.0 BACKHAUL

31. Commenters generally agreed that additional spectrum may be required to support growth in backhaul demand over the next five years. Several mobile operators in addition to us indicated that they intend to prioritize building out fibre backhaul capacity over relying on wireless backhaul, including QMI, Telus, and SaskTel.⁴⁶ However, Rogers requested the mmWave band 32 GHz be designated for exclusive fixed backhaul use.⁴⁷ We oppose this, and instead recommend assigning this band for flexible use if it receives IMT designation at WRC-19. Telus also recommended deferring this band's designation "so that it may be kept unencumbered and available for a future flexible use assignment."⁴⁸ A flexible use designation would not prevent operators for using this spectrum for backhaul, but would simply ensure that licensees can quickly respond and adapt as the 5G ecosystem develops.

6.0 POTENTIAL FREQUENCY BANDS FOR FUTURE RELEASE

6.1 3500 MHz

32. Many commenters stressed the importance of 3500 MHz to Canada's 5G deployment strategy, and we believe that making this band available for mobile use should be the Department's top priority. As Telus argued, "the 3500 MHz spectrum band – globally seen as the most critical to early 5G deployment – will need to be available no later than 2019. To date, several G8 nations alongside other key countries have already made or are planning to make this band available for mobile use in 2018."⁴⁹ Shaw also emphasized that without access to mobile use in 3500 MHz, "Canada risks falling further behind its international peers in the race to deploy 5G services."⁵⁰ In order to keep Canada in step with international developments, the Department should immediately allow mobile use in the band for current licensees. While this measure will ensure Canadian 5G network deployments can commence as soon as possible,

⁴⁶ QMI Comments, paragraph 41; Telus Comments, paragraph 94; and SaskTel Comments, paragraph 20.

⁴⁷ Roger Comments, paragraph 216.

⁴⁸ Telus Comments, paragraph 154.

⁴⁹ Telus Comments, paragraph 7.

⁵⁰ Shaw Comments, paragraph 27.

the current amount of 3500 MHz spectrum will not be sufficient in the long term and as we noted above, the Department should also expand the 3500 MHz band upwards into the C-band.

33. We also note that Telus proposed to extend the band further downwards to 3300 MHz in order to align with the 3GPP-defined band.⁵¹ While we recognize that this extension may be difficult given current assignments in this frequency range, we encourage the Department to consider this proposal in the interest of providing the largest possible amount of bandwidth for future 5G networks.

34. Regardless of the timing and chosen range of the 3500 MHz band expansion, it is imperative the Department allow current licence holders to use their 3500 MHz spectrum for mobile use as soon as possible. By the time that a full consultation has taken place, the licensing and auction framework determined, and an auction is completed, two or more years will have elapsed. This would effectively prevent Canada from deploying 5G mobile services in the band in 2019 when equipment is expected to be available, causing Canada to fall behind internationally and be deprived of the benefits of 5G services.

35. The Department has already determined that flexible use is appropriate for 3500 MHz spectrum.⁵² Therefore, it would be in the public interest for the Department to allow incumbents to deploy their existing 3500 MHz spectrum for mobile or fixed services when it launches the 3500 MHz consultation or as part of the annual licence renewal process this year. Permitting incumbents to immediately deploy mobile 5G services would lay the groundwork for Canada's 5G infrastructure and allow Canada to keep up with global developments.

36. Some commenters, such as Telus and Cogeco, raised concerns about the lack of deployment by current 3500 MHz licence holders and argued that it would be unfair to allow incumbents to continue to use the band.⁵³ As spectrum holders in the 3500 MHz band through our Inukshuk Wireless partnership with Rogers, we have utilized the 3500 MHz spectrum to the extent permitted by the equipment ecosystem available. For years, deployment in this band was constrained by the ecosystem. The Department recognized these roadblocks and twice extended the deployment requirements due to the "extenuating circumstances" caused by the

⁵¹ Telus Comments, paragraph 18.

⁵² DGSO-007-14, *Decisions Regarding Policy Changes in the 3500 MHz Band (3475-3650 MHz) and a New Licensing Process*, paragraph 22 and Decisions 1 and 4.

⁵³ Telus Comments, paragraph 117 and Cogeco Comments, paragraphs 28 and 29.

lack of available technology.⁵⁴ Despite these obstacles, we remain fully compliant with the deployment conditions of our licence.

37. Recent technological advancements have permitted us to deploy a new TDD LTE network, which we view as a precursor to a 5G network, although we remain constrained by current CoLs to deploy fixed service only. As a result, this February, we announced the successful completion of Wireless to the Home (WTTH) trials in the 3500 MHz band, and the launch of a new commercial fixed wireless service in the rural communities of Orangeville, Feversham and Bethany in 2017.⁵⁵ We plan to roll out service to additional rural communities beginning in 2018 and anticipate that this service will grow significantly thereafter. If we were also permitted to deploy 3500 MHz spectrum for mobile services, we believe there would be numerous opportunities to expand our services in this band.

38. Having built an LTE-based network in this band as a precursor to a 5G network, incumbent operators like ourselves are well positioned to support the evolution to 5G services. Permitting incumbents to retain their spectrum holdings would also provide certainty that their investments in network upgrades will not be stranded, allowing them to confidently invest in new 5G equipment and begin to support a customer migration path from 4G.

6.2 mmWave and 600 MHz

39. Once the process to release 3500 MHz has been initiated, the second-most important spectrum will be the bands included in the mmWave consultation, specifically 28 GHz and 37-40 GHz. These bands will be essential to the early deployment of 5G networks for commercial mobile operators, and we encourage the Department to initiate these auction processes as soon as possible.

40. Some commenters stressed the importance of releasing 600 MHz in the near future, including Shaw, Sogetel, and BCBA.⁵⁶ In our view, the mmWave bands are more relevant to

⁵⁴ DGSO-006-12, *Consultation on Renewal Process for 2300 MHz and 3500 MHz Licences*, October 2012, paragraph 16.

⁵⁵ "Huawei enables Bell Canada's Wireless to the Home (WTTH) trials that put Canadian rural customers on the path to 5G," 27 February 2018. <https://www.newswire.ca/news-releases/huawei-enables-bell-canadas-wireless-to-the-home-wtth-trials-that-put-canadian-rural-customers-on-the-path-to-5g-675262803.html>.

⁵⁶ Shaw Comments, paragraph 14; Sogetel Comments, paragraph 61; and BCBA Comments, paragraph 53.

the development of a 5G ecosystem, and should therefore take higher priority. As Telus argued, 600 MHz is "not associated with Canada's early entry into 5G," so bands like 28 GHz and 37-40 GHz, which are being considered globally as 5G bands, should take precedence.⁵⁷ In addition, given that the efforts to migrate current broadcasting incumbents will delay new licensees from being able to deploy, the 600 MHz band should not be the Department's highest priority.

6.3 4400-5000 MHz

41. Telus proposed the 4400-5000 MHz range for future consideration by the Department.⁵⁸ As this spectrum is allocated to mobile and fixed services on a primary basis, we support making this spectrum available for flexible use to support the future demand for commercial mobile services.

6.4 37-43.5 GHz

42. Shaw proposed the 37-43.5 GHz band for future consideration by the Department.⁵⁹ Given the expected demand for mobile broadband spectrum, we support the future release of this band for flexible use. It should also be noted that this spectrum is one of the key spectrum ranges under consideration by ITU-R Task Group 5/1 the group responsible for conducting sharing and compatibility studies and reporting the results to the World Radio Conference – 2019.⁶⁰

6.5 47.2-48.2 GHz

43. Shaw proposed the 47.2-48.2 GHz band for future consideration by the Department.⁶¹ We support allocating this band for flexible use in order to harmonize with the FCC's recent decision.⁶²

⁵⁷ Telus Comments, paragraph 144.

⁵⁸ Telus Comments, paragraph 185.

⁵⁹ Shaw Comments, paragraph 112.

⁶⁰ https://www.itu.int/dms_pub/itu-r/oth/0a/06/ROA0600006C0001PDFE.pdf.

⁶¹ Shaw Comments, paragraph 112.

⁶² FCC-17-152A1, *Spectrum Frontiers Second Report and Order*, November 2017, paragraphs 43 and 44.

6.6 1500 and 1600 MHz Paired Spectrum

44. Rogers proposed the following bands for future consideration by the Department:⁶³

- 1525-1559 MHz paired with 1626.5-1660.5 MHz and 1670-1680 MHz; and
- 1610.5-1626.5 MHz paired with 2483.5-2500 MHz.

45. We generally encourage the Department to consider these bands and other adjacent bands to create larger channels.

6.7 5925-7125 MHz (6 GHz)

46. As discussed above, we generally support flexible use in the 6 GHz band, but suggest that the Department await the outcomes of the U.S. and other international consultations before making a final determination.

7.0 CONCLUSION

47. The release of additional spectrum will put Canada at the forefront of commercial mobile network deployments, allowing Canadians to continue to benefit from cutting-edge wireless services and applications and ensuring Canada's mobile networks remain world-class. We urge the Department to ensure that commercial mobile operators have sufficient spectrum to meet demand by promptly releasing the bands proposed in this consultation. Access to sufficient spectrum is critical to ensuring the timely and sustained development and evolution of existing networks and to permit rapid deployment of new and innovative 5G systems and services in Canada.

*** End of Document ***

⁶³ Rogers Comments, paragraphs 246 to 253.