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***Consultation on a Policy and Licensing Framework for Spectrum in  
the 3500 MHz Band, Notice No. SLPB-002-19***

**Comments**

**of**

**SHAW COMMUNICATIONS INC.**



**August 2, 2019**

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## I. INTRODUCTION AND EXECUTIVE SUMMARY

1. The following constitutes the initial comments of Shaw Communications Inc. (“Shaw”), on behalf of itself and Freedom Mobile Inc. (“Freedom” or “Freedom Mobile”), to Innovation, Science and Economic Development Canada (the “Department” or “ISED”) in connection with the proceeding initiated by *Consultation on a Policy and Licensing Framework for Spectrum in the 3500 MHz Band*, Notice No. SLPB-002-19 (the “Consultation” or “Consultation Document”).
2. As the Department considers the policy framework for the 3500 MHz spectrum auction, it is essential to keep in mind the nascent state, but growing momentum, of competition in Canada’s wireless market and the paradigmatic shift that is about to occur with the evolution to 5G. For Canadians and our digital future, the most important issue in this proceeding is to ensure that the strong, disruptive wireless competition that has recently emerged in Canada can not only be sustained, but also strengthened, in the 5G era.
3. There is no question that the Big 3 wireless incumbents continue to jointly dominate Canada’s wireless market. As fictionally represented in recent Freedom television advertisements, dubbed the *Monolithic Wireless* series,<sup>1</sup> Canadian wireless customers continue to be frustrated by the *status quo*. However, there is also no question that Freedom Mobile and other strong, regional new competitors have shaken the foundations of the Big 3’s dominant position and offer the strongest hope of sustainable competition. We are finally on the cusp of creating a dynamic, competitive market that broadly offers affordable, innovative and differentiated services, and true choice, for all Canadians.
4. The evidence of consumer benefits from the presence of Freedom Mobile and other new regional wireless competitors is indisputable, and it is growing with each passing month. When Freedom launched its Big Gig plans in late 2017, it triggered a transformative response from the Big 3 that continues to reverberate throughout the market.<sup>2</sup> Freedom’s generous, affordable data packages, which remain the least expensive in its markets, have forced the Big 3 to significantly reduce their

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<sup>1</sup> Freedom Mobile, “Introducing Monolithic Wireless”, YouTube video, 6 April 2018, online: [https://www.youtube.com/watch?time\\_continue=24&v=o3QW4TWBykY](https://www.youtube.com/watch?time_continue=24&v=o3QW4TWBykY); and Freedom Mobile, “Monolithic Wireless – The catch, YouTube video, 6 April 2018, online: <https://www.youtube.com/watch?v=SYgvEtUQwv8>

<sup>2</sup> Within months of the launch of our Big Gig plans, the Big 3 had lowered the prices of their flanker brands to match Freedom’s lower prices for all data levels, including low data plans. Other responses from the Big 3 include promotional plans targeting Freedom customers, special promotions within Freedom’s footprint and promotional plans mirroring Freedom’s offering, leading to a decrease in revenue per user. Dr. Eric Emch (Bates White Economic Consulting) “The evolution of facilities-based competition in Canada: Recent gains and regulatory risks,” 15 May 2019, report prepared for Shaw Communications Inc. (“Shaw”) in Telecom Notice of Consultation CRTC 2019-57 (“Emch (May 2019)”), paragraphs 36 and 38 to 40.

prices, to retreat from punitive, data overage charges and to be more transparent with their customers. Freedom's presence has not only benefitted Freedom customers – it has also disciplined the practices of the Big 3, thereby bringing significant benefits to the customers of the Big 3 and injecting a new dynamic energy into Canada's wireless market.

5. For example, in recent weeks, each of the incumbents was finally forced to respond to our success by launching their own more expensive versions of our Big Gig plans. For example, Telus launched its "Peace of Mind" plans, which offer no overage charges and the ability to separate device subsidies from service fees.<sup>3</sup> Bell also launched its "Bell Unlimited" plans, while Rogers launched its "Infinite" plans, which offer 10 GB of data and no overage charges.<sup>4</sup>
6. Freedom has been offering the key elements of these plans for years, only at a cheaper price and with higher device subsidies. For the Big 3, these new plans offer a dramatic about-face from the expensive data overages that their customers have been paying for years. We have worked hard to re-set Canadians' expectations of their wireless providers and the Big 3 are following our lead.
7. Even though Freedom punches well above its weight class, Freedom's goal of overcoming the joint dominance of the Big 3 can only be achieved if there are effective measures put in place to address the significant, ongoing barriers to investment and competition that Freedom continues to face. Especially relevant to this proceeding are the significant spectrum advantages that the Big 3 incumbents continue to enjoy.
8. As detailed in the submissions below, the Big 3 continue to hold much more mid-band spectrum than the regional competitors, all of which can eventually be repurposed for 5G. In addition, under ISED's *Decision on Revisions to the 3500 MHz Band to Accommodate Flexible Use and Preliminary Decisions on Changes to the 3800 MHz Band*, SLPB-001-19,<sup>5</sup> ("the "Reclamation Decision"), Bell and Rogers will be granted automatic access to 3500 MHz spectrum for mobile use. Telus will also benefit from this decision by virtue of its comprehensive reciprocal access

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<sup>3</sup> TELUS Communications Inc., "Introducing endless data in combination with device financing and family discounts, only from TELUS," *Globe Newswire*, 03 July 2019, online: <https://www.globenewswire.com/news-release/2019/07/03/1877788/0/en/Introducing-endless-data-in-combination-with-device-financing-and-family-discounts-only-from-TELUS.html>

<sup>4</sup> Rogers Communications, *Rogers Introduces Infinite Wireless Data Plans with No Overage Charges*, 12 June 2019 ("Rogers Infinite Wireless Data Plans Press Release"), online: <https://about.rogers.com/2019/06/12/rogers-introduces-infinite-wireless-data-plans-no-override-charges/>; and Jonathan Lamont, "Bell launches \$75 for 10GB unlimited data promo plans to match Rogers," *Mobilesyrup*, 13 June, 2019, online: <https://mobilesyrup.com/2019/06/13/bell-unlimited-data-plans-rogers-75-10gb/>

<sup>5</sup> Innovation, Science and Economic Development Canada ("ISED"), *Decision on Revisions to the 3500 MHz Band to Accommodate Flexible Use and Preliminary Decisions on Changes to the 3800 MHz Band*, SLPB-001-19, June 2019 ("SLPB-001-19").

agreement with Bell. As a result, the advantage that *each* of the Big 3 will have coming into the auction will be even greater than it is now. In contrast to the regional competitors, the Big 3 were able to acquire a significant portion of their mid-band spectrum holdings without having to spend billions of dollars up-front. This financial advantage has amplified the impact of the decades-long head start advantage that the Big 3 continue to enjoy.

9. The Big 3 spectrum advantages correlate directly to Big 3 network advantages, in the form of greater capacity and coverage. These network advantages correlate directly with marketing, perceived customer-experience and competitive advantages for the Big 3. The flip side for Freedom is that the spectrum disadvantages that it faces hinder its ability to build scale, which limits its capacity to invest and expand its affordable offerings and competitive discipline that are challenging the Big 3 and benefiting Canadians across the country. If Freedom and other regional competitors are unable to gain access to 5G spectrum portfolios that are comparable with those of the Big 3, the Big 3 will be able to sustain their ~ 90% subscriber share.
10. This Consultation offers the Department a rare opportunity to rectify the ongoing imbalance in mid-band spectrum holdings between the Big 3 and the regional competitors, while also preventing any future imbalance, specifically in the 3500 MHz spectrum band. Suitable pro-competitive spectrum policy measures will help bring Canada closer to achieving the goal of sustainable wireless competition and it will also ensure the brightest possible 5G future for Canadians.
11. 5G has the potential to deliver enormous benefits to Canadians, in all aspects of their lives – economically, socially and culturally. 5G's impact is expected to be far broader and more transformative than previous generational leaps, including from 3G to LTE. 5G is not just about faster speeds for broadband, it also holds the potential to fundamentally change how Canadians live and how Canadian communities, businesses and governments manage and deliver services, infrastructure and resources. 5G networks will facilitate “smart” versions of fundamental infrastructure, including energy use, transportation networks, agricultural systems and water management, all of which will improve economic and ecological efficiency and safety. The 5G era will be characterized by ultra-connectivity, with myriad devices within our homes, workplaces, and cities communicating with each other, all the time. In this environment, connectivity will play a bigger role than ever before.
12. Canada has an opportunity to be a global leader in 5G, but this potential will not be realized without a wireless market that is sustainably competitive, dynamic and affordable. Networks will be the engines that drive 5G. Facilities-based competition creates opportunities for truly differentiated services and true choice in the market, both for consumers and application developers. For example, Freedom's Big Gig offers would never have been possible without our investment in LTE.

Without multiple, competing facilities, Canada's 5G market will be static and overpriced, and we will fail to realize the transformative promise of a truly dynamic 5G environment that includes affordable access to innovative connectivity services, as well as an infinite number of potential applications. In short, Canada's 5G success depends on the presence of strong facilities-based competitors that can challenge the Big 3.

13. The 3500 MHz spectrum band is an essential 5G building block. Mid-band spectrum, such as 3500 MHz spectrum, offers the dual capabilities of significant capacity, as well as coverage. This is why the 3500 MHz band is expected to be a work-horse for next-generation wireless services. Many nations have aligned on using this band for 5G mobile services, with several domestic regulators having completed licensing processes. With global momentum behind this band, a robust device ecosystem has already emerged.
14. Given their existing spectrum advantages, if the Big 3 can succeed in foreclosing, or disadvantaging, new regional competitors in the 3500 MHz band, that will guarantee significant competitive advantages for the Big 3 in the 5G world. As corroborated by the attached expert report prepared by Professor Peter Cramton, the incumbents are economically incented and able to maintain their dominance of the market, and therefore have used, and will continue to use, whatever measures are available to them to foreclose access by new competitors. Without 3500 MHz spectrum, new competitors will not be able to compete in 5G, and in turn, will not be able to sustainably compete in wireless. Knowing this, the Big 3 are more incented than ever to foreclose new competitors from accessing this spectrum. By foreclosing regional competitors from the 3500 MHz band or other foundational 5G building blocks, the Big 3 can restore their joint dominance of Canada's wireless market, destroying the progress we have made in recent years in bringing sustainable competition to Canada and preventing the realization of Canada's full 5G potential. This indisputable fact permeates all aspects of this proceeding.
15. The Department must therefore adopt a set-aside to address the risk that the Big 3 incumbents will act on their ability and incentive to foreclose new competitors from access to this critical spectrum, which would effectively eliminate the prospects for competition in 5G. The Department should also implement an additional in-band cap that would preserve the integrity of the set-aside and prevent a re-concentration of spectrum through M&A activity.
16. Freedom's proposal, summarized below, balances the considerations of rural connectivity and competition, urban capacity needs, as well as the variable amount of spectrum available throughout Canada as a result of the Department's Reclamation Decision:

- (a) In all areas where at least 80 MHz of spectrum is available for the auction, 50 MHz of spectrum would be set-aside for exclusive bidding by eligible wireless competitors;
  - (b) In urban areas with less than 80 MHz of spectrum available for the auction, 40 MHz of spectrum would be set-aside for exclusive bidding by eligible wireless competitors – for purposes of this aspect of the proposal, “urban areas” would be those listed in Annex G of the Consultation Document;
  - (c) In non-urban areas (i.e., those not listed in Annex G of the Consultation Document) with less than 80 MHz of spectrum is available, 50% of the available spectrum would be set-aside for exclusive bidding by eligible wireless competitors; and
  - (d) Finally, in order to ensure that multiple parties can acquire 3500 MHz spectrum, and prevent a re-concentration of spectrum in the hands of the Big 3 through acquisitions outside of the auction, which would distort the market and undermine the set-aside, an in-band cap of 50 MHz would be applied to all holders of 3500 MHz spectrum<sup>6</sup>.
17. The Big 3 will likely argue that there is no need for a set-aside, or that a cap alone would be preferable to a set-aside. They are wrong – the empirical evidence and economic theory are clear that the Big 3 incumbents will foreclose, and disadvantage, new competitors if given any opportunity in the auction. Given that the dominance of the Big 3 is now more vulnerable than ever because of the growing strength of the regional competitors, the incentive for the Big 3 to shut out strong, disruptive competitors like Freedom has never been greater.
18. The Big 3 will likely also argue that they need 3500 MHz spectrum more than the regional competitors. This is also wrong – in order for the regional competitors to continue to discipline, and eventually overcome, the dominance of the Big 3, they need to have a parity of 3500 MHz holdings specifically, and of mid-holdings more generally, in comparison to the Big 3. By suggesting that the Big 3 have greater need for the significant capacity associated with 3500 MHz spectrum, they are indirectly arguing that their lopsided market shares should persist in the future. However, this is not acceptable and will not be the case with the sustained presence and strength of the new regional providers like Freedom. The Big 3 also have a misconceived view that they are uniquely capable of delivering on the promise of 5G. This ignores the foundational concept that, if Canada wants a truly dynamic 5G environment, it must have a truly competitive wireless market. That will not exist if we leave the market to the Big 3 – as the evidence shows, the new facilities-based regional competitors have finally started to inject a dynamic energy into the wireless market, and

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<sup>6</sup> Those who retain more than 50 MHz of spectrum through the Reclamation Decision would be grandfathered at their post-conversion current holdings.

their presence must therefore be sustained through the evolution to 5G. If we fail in this regard, Canada will revert to a static, unresponsive market that is characterized by uniform and punitive pricing and services.

19. The Department has an opportunity to set Canada up for success in 5G by designing an auction framework for 3500 MHz spectrum that is founded on promoting competition and competitive facilities-based investment. A competitive 5G landscape requires strong facilities-based alternatives to the Big 3 national incumbents, which in turn requires those competitors to have access to sufficient mid-band 5G spectrum. There is already a significant imbalance in mid-band spectrum between incumbents and new competitors, and this Consultation offers an opportunity to rectify that.
20. In addition to our pro-competitive measure proposal, Freedom will address the following proposals in its submissions below, all of which are intended to set Canada up for a competitive, successful 5G environment:
  - (a) Regarding eligibility to bid on set-aside spectrum, we propose that the Department adopt an additional criterion to supplement the Department's proposal requiring that a bidder must have a substantial presence in the mobile market in Canada. Setting Canada up for success in 5G and ensuring timely deployment of 5G services means promoting competition among multiple facilities-based competitors that have demonstrated their commitment and ability to respond to Canadians' connectivity needs and offer them innovative, differentiated choice.
  - (b) While the general deployment obligations set out in the Consultation Document are reasonable, equitable and promote the Department's objectives, the Department must refrain from adopting its proposal to apply additional, unduly onerous deployment requirements on those that currently operate a mobile LTE network. The additional requirements penalize new competitors that have invested billions in delivering LTE services to Canadians, disproportionately harming new competitors and providers that are not existing licencees, and could lead to inefficient deployments of network technologies which will not benefit Canadians.
  - (c) In order to promote the competitiveness of the auction and encourage participation, the Department must ensure that its opening bid prices are fair and in line with international precedents. In setting opening bid prices, the Department must also consider the risks associated with building new networks.



- (d) Existing 3500 MHz licencees must not have a head start advantage in deploying 3500 MHz spectrum, which would ultimately give them a head start on 5G and distort the competitive landscape.

21. Shaw highlights that the risks for new mobile wireless competitors in Canada have recently amplified significantly as a result of uncertainties in Canada's policy environment stemming from the CRTC's Wireless Review proceeding and its preliminary view that the benefits that a mandated MVNO regime will deliver will outweigh the negative impacts on investment. Shaw remains committed and able to invest to deliver the benefits of facilities-based competition to Canadians. However, we note that a regulatory regime that positions resale-based models at an advantage over facilities-based new competitors will undermine the economics of facilities-based investment generally and the prospects for sustainable competition in Canada.

## **II. THE LICENSING FRAMEWORK MUST PROMOTE COMPETITION**

22. Competition in 5G will ensure that Canadians, in urban and rural areas, have access to affordable and innovative 5G services and that service providers continue to deliver the newest 5G technologies to Canadians. A competitive 5G environment will also position Canada and the Canadian economy for long-term success in the transition to a digital-intensive economy.

23. Freedom was pleased to see the Department's confirmation of the guiding principles for this Consultation:<sup>7</sup>

- (a) Fostering innovation, investment and the evolution of wireless networks by enabling the development and adoption of 5G technologies.
- (b) Supporting sustained competition, so that consumers and businesses benefit from greater choice.
- (c) Facilitating the deployment and timely availability of services across the country, including rural areas.

24. Freedom's proposals, and their focus on measures to enhance competition in Canada, are intended to advance these principles. Facilities-based competition drives innovation, affordability, pricing discipline and consumer choice in the Canadian wireless market. It is generally accepted that competition is more vibrant and prices for mobile services are lower where there is an alternative,

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<sup>7</sup> ISED, *Consultation on a Policy and Licensing Framework for Spectrum in the 3500 MHz Band*, SLPB-002-19, June 2019 ("SLPB-002-19"), paragraph 11.

strong facilities-based provider to challenge the wireless incumbents.<sup>8</sup> This competition and pricing discipline will be important in the 5G era as Canadian businesses, governments and consumers require reliable, innovative and cost-competitive connectivity for the millions, if not billions, of devices and new applications that will rely on 5G connectivity.

**A. The Regional Competitors Are Disrupting the Dominance of the Big 3**

25. Facilities-based wireless competitors like Shaw have been a disruptive force in the Canadian wireless market. Facilities-based wireless competitors are challenging the market power and dominance of the wireless incumbents by investing heavily in their networks, improving the quality, reliability, coverage and distribution of their services, and listening to the diverse needs of customers that have traditionally been neglected by the Big 3 incumbents.
26. Since Shaw entered the market in 2016, Shaw has invested well over \$3 billion in its wireless business.<sup>9</sup> This includes acquiring spectrum licences in the 600 MHz, 700 MHz and 2500 MHz spectrum bands, as well as extensive deployment efforts. We are continuously expanding our network into new markets, including communities in Eastern Ontario and Western Canada such as Peterborough, Cobourg, Belleville, Brockville, Cornwall, Pembroke, Red Deer and Victoria. We also have many more launches set to occur in the coming months, including Medicine Hat, Lethbridge, Kootenays, Okanagan, Nanaimo, Courtenay, Thompson and Prince George. This will multiply the number of Canadians who benefit from our competitive presence.

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<sup>8</sup> See Dr. Eric Emch (Bates White Economic Consulting), "An assessment of wholesale roaming policy in Canada: The relationship between competition, regulation, investment and access," 8 September 2017, report prepared for Shaw Communications Inc. in the proceeding initiated by Telecom Notice of Consultation CRTC 2017-259 ("Emch (2017)"), Section III.A.6, Figure 1 based on NLG Nordicity Group Ltd., *2016 Price Comparison Study of Telecommunications Services in Canada and Select Foreign Jurisdictions*, prepared for the CRTC ("Nordicity 2016 Price Comparison Study"), pages 79 to 83 (Table C.2.1, Table C.2.2, Table C.2.3, Table C.2.4 and Table C.2.5) online: <http://www.crtc.gc.ca/eng/publications/reports/compar/compar2016.htm>. Overall, Nordicity found that new entrants' prices for mobile wireless telecommunications services were lower than the incumbents' by a range of 25% to 36% for service basket Levels 1, 2, 3, 4 and 5: Nordicity 2016 Price Comparison Study, page 32. See also Competition Bureau Bell Statement: Competition Bureau of Canada, *Competition Bureau Statement Regarding Bell's Acquisition of MTS*, 15 February 2017, online: <https://www.competitionbureau.gc.ca/eic/site/cb-bc.nsf/eng/04200.html>. The Bureau conducted a thorough pricing analysis and found that mobile wireless pricing is substantially lower in areas where a strong regional competitor is present.

<sup>9</sup> Shaw Financial Reports, including 2016 Annual Report, 2017 Annual Report, 2018 Annual Report, and Q1 2019 Quarterly Report. The Reports are available online: <https://www.shaw.ca/Corporate/Investor-relations/Financial-Reports/>

27. These investments have enabled us to significantly enhance our network, including deploying LTE-Advanced and launching Voice over LTE. They have also enabled us to deliver the benefits of facilities-based competition to more Canadians across the country.
28. With each additional investment, we have been able to gradually mount a stronger competitive threat against the Big 3 wireless incumbents by offering industry-leading lower-priced offerings to our customers and truly differentiated services that address gaps in the marketplace. As a result of our investment in the capacity of our networks we were able to launch our “Big Gig” plans in 2017, which have significantly changed the wireless market by making more data available to consumers at significantly lower prices. These affordable data plans offer customers 10 GB for only \$50 per month, with no financial penalties or overages. This has brought relief to one of the most acute pain points for Canadian wireless consumers: a lack of affordable and valuable options for data plans.<sup>10</sup>
29. Competition from Shaw has put real pressure on the Big 3 to lower their prices, improve their service offerings, provide their subscribers with plans with higher data allotments and lower (or even eliminate) the much-resented overage charges that customers pay to the Big 3. For example, shortly after the introduction of our popular Big Gig plans, each of the Big 3 matched our offering with a \$60/10GB promotional plan.<sup>11</sup> In fact, the Big 3, and their sub-brands, have continued to offer promotional pricing on wireless plans with more data to compete with our innovative offerings.
30. More recently, Rogers introduced a permanent wireless plan that offers subscribers 10GB for \$75 with no overage charges,<sup>12</sup> and TELUS and Bell soon followed with their own competing offerings. Not only are we driving the reduction of prices and the cost of data, as the Competition Bureau has recently stated, we are driving higher usage.<sup>13</sup>
31. In other words, we have permanently changed the Canadian wireless market with our Big Gig plans, which the incumbents have been forced to respond to with their own more expensive versions. We have worked hard to reset Canadians’ expectations of their wireless providers and the competition is learning to follow our lead.
32. Although facilities-based wireless competitors like Shaw are clearly having a positive competitive impact and driving meaningful change in the wireless market, this is not guaranteed in the 5G era. Unless measures are implemented through this licensing process, the Big 3’s significant spectrum advantage in all spectrum ranges, including mid-band spectrum, will slow our progress and deny

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<sup>10</sup> Emch (May 2019), paragraphs 30 to 34 and Figures 6, 7, 8, 9 and 10.

<sup>11</sup> Emch (May 2019), paragraphs 38 to 40.

<sup>12</sup> Rogers Infinite Wireless Data Plans Press Release.

<sup>13</sup> Competition Bureau, Comments dated 15 May 2019, Telecom Notice of Consultation CRTC 2019-57: *Review of Mobile Wireless Services*, 28 February 2019 (“TNC 2019-57”), paragraphs 16 and 17.

us the ability to bring the benefits of sustainable competition to 5G. As the Competition Bureau has recently stated, the positive effects that new competitors like Shaw are able to deliver can be accelerated further by structuring spectrum auctions to promote competition.<sup>14</sup>

**B. Spectrum Concentration in Canada is a Barrier to Competition in 5G**

33. 5G networks in Canada will need to leverage low-band, mid-band and high-frequency spectrum to deliver mobile broadband services to end-users.
34. Low-band spectrum provides the foundation of a 5G network. The spectrum is essential for extending 5G mobile broadband services to wide areas and indoor environments and providing coverage in an economically efficient way due to its propagation characteristics that enable signals to travel further, penetrate buildings and bend around obstructions.<sup>15</sup> Mid-band spectrum provides a crucial mix of capacity and coverage for 5G with its wide channels, low latency, reliability and favourable wide-area propagation characteristics. High frequency spectrum (e.g., mmWave spectrum) delivers the extremely high data rates and ultra-low latency required for next-generation Internet of Things (IoT) applications.
35. In order to deploy 5G offerings and drive competition in 5G services, facilities-based wireless competitors like Shaw must have sufficient low, mid and high-band spectrum to meet the capacity, latency, coverage and reliability requirements of 5G applications.
36. With respect to mid-band spectrum, the Big 3 have dominated the spectrum holdings landscape for decades, owing in large part to being beneficiaries of gifted spectrum. For example, the Big 3 were gifted 10 MHz of mid-band PCS spectrum each.<sup>16</sup> New entrants Microcell and Clearnet were gifted 30 MHz of PCS spectrum each, which were later purchased by Rogers and TELUS,

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<sup>14</sup> Competition Bureau, Comments dated 15 May 2019, TNC 2019-57, paragraph 91.

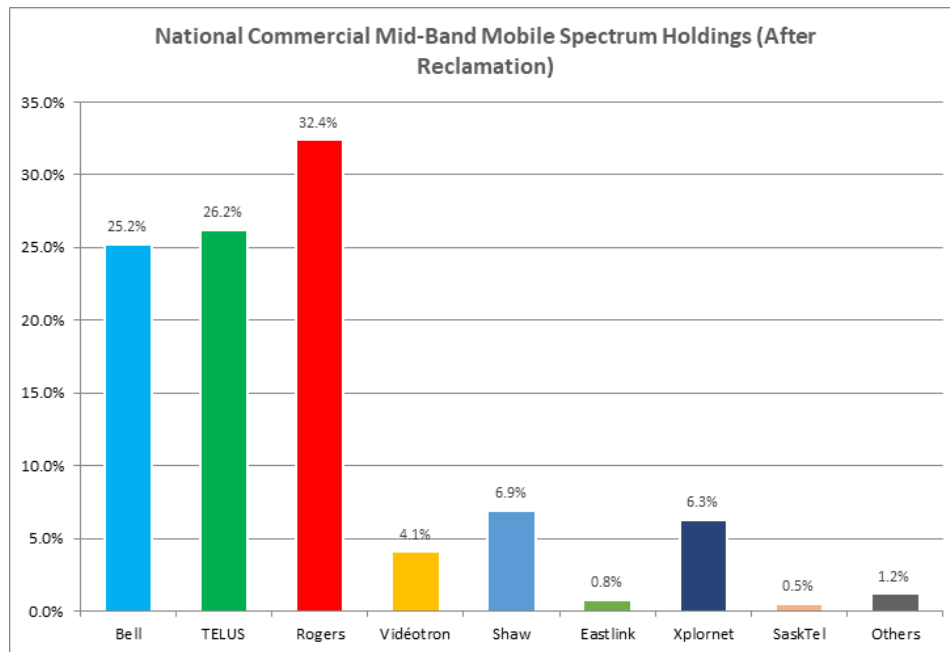
<sup>15</sup> Peter Cramton (University of Maryland and University of Cologne), *The Critical Importance of Pro-competition Measures in the Canadian 3500 MHz Auction*, 10 July 2019, report prepared for Shaw Communications Inc. in the proceeding initiated by ISED, *Consultation on a Policy and Licensing Framework for Spectrum in the 3500 MHz Band*, SLPB-002-19, June 2019 (“Cramton (July 2019)”), page 4.

<sup>16</sup> Industry Canada, *Archived – PCS at 2 GHz Licensees*, 18 December 1995, online: <https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf01784.html>

respectively.<sup>17</sup> The incumbents also acquired virtually all of the PCS spectrum that was auctioned in 2001.<sup>18</sup>

37. As a result, mid-band spectrum, which can be repurposed as a critical input for 5G, is significantly concentrated in the hands of the incumbents who hold 84% of mid-band spectrum, as illustrated below:

**Figure 3: National Mid-Band<sup>19</sup> Spectrum Holdings (Weighted MHz/Pop)**



38. The incumbents' already-significant advantage in mid-band spectrum holdings is exacerbated after the Reclamation Decision, under which incumbent FWA licensees will be eligible for flexible use licences that will enable them to retain a sizable amount of their existing spectrum holdings in each service area (up to 60 MHz). This represents a significant windfall for the incumbents who had originally obtained their 3500 MHz licences for fixed services.

<sup>17</sup> Industry Canada, *Consultation on the Renewal of Cellular and Personal Communications Services (PCS) Spectrum Licences*, March 2009, section 2.2; Competition Bureau, *Archived – Acquisition of Microcell Telecommunications Inc. by Rogers Wireless Communications Inc.*, April 2005, online: <https://www.competitionbureau.gc.ca/eic/site/cb-bc.nsf/eng/00257.html>; and Industry Canada, *Archived – A Brief History of Cellular and PCS Licensing, October 2004* (“Brief History of Cellular and PCS Licensing”), online: <https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf08251.html>.

<sup>18</sup> Industry Canada, *Brief History of Cellular and PCS Licensing, Appendix E “2001 PCS Auction Licensees”*, online: <https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf08251.html>.

<sup>19</sup> Includes BRS, WCS, PCS, AWS-1 and AWS-3 spectrum holdings.

39. Most notably, Bell and Rogers will be eligible for flexible use licences through their interest in Inukshuk Wireless Partnership (“Inukshuk”). According to the Department, “Inukshuk is a partnership between Bell and Rogers ... with each owning a 50% partnership interest.”<sup>20</sup> As a result of this windfall, Bell and Rogers will each have 25 MHz or 30 MHz of spectrum in most service areas as a starting point in the 3500 MHz band.<sup>21</sup>
40. Bell and TELUS’ considerable holdings are further enhanced by the comprehensive reciprocal network access arrangement between the two parties which gives each party access to the other’s HSPA and LTE networks. As a result of this agreement, Bell and TELUS have reciprocal access to each other’s capacity and physical infrastructure. Knowing they have reciprocal access to each other’s RAN capacity and physical infrastructure through the Reciprocity Agreement, Bell and Telus have established a pattern of acquiring and dividing spectrum along their traditional incumbent wireless (and wireline) territories. This is particularly evident from the spectrum acquisition and subordination activities that occurred during and following the 2500 MHz and 700 MHz spectrum auctions.
41. In the 700 MHz auction, Telus and Bell primarily acquired spectrum in their traditional wireline incumbent territories. Less than a year after the auction, Telus and Bell cemented this division by subordinating the spectrum licenses that they each acquired in the other partner’s traditional wireline incumbent territories. Telus subordinated all of the primary spectrum licenses for 700 MHz spectrum that it acquired in Newfoundland & Labrador, Nova Scotia & PEI, New Brunswick (together, the “Maritime Provinces”), Quebec and Ontario to Bell. Similarly, Bell subordinated all of the primary spectrum licenses for 700 MHz spectrum that it acquired in Alberta and British Columbia to Telus.
42. A similar pattern also emerges from the 2500 MHz spectrum. After acquiring 40 MHz of Broadband Radio Spectrum in the 2500 MHz auction in all of the Tier 3 service areas in the Maritime Provinces, Quebec and Ontario, Telus subordinated all of its primary spectrum licenses in these service areas to Bell. In fact, of the 122 spectrum blocks that Telus acquired in the 2500 MHz auction, it has subordinated 86 spectrum blocks (70%) to Bell. Similarly, Bell subordinated all of the primary spectrum licenses that it acquired in the 2500 MHz auction in Alberta to Telus.

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<sup>20</sup> Industry Canada, *Transfer of Spectrum Licences Held by Inukshuk Wireless Partnership (Inukshuk) to Bell Mobility Inc. (Bell)*, 15 January 2015, paragraph 6, online: <http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf10922.html>

<sup>21</sup> SLPB-002-19, Appendix A1: Inukshuk is eligible to retain between 20 MHz and 60 MHz of spectrum in the 3500 MHz band, with the majority of Inukshuk’s licences allowing it to retain 50 MHz or 60 MHz of spectrum in each service area.

43. Based on the foregoing, we can expect that Telus and Bell will engage in the same pattern of behaviour with respect to 3500 MHz spectrum. Granting Bell/TELUS and Rogers access to 3500 MHz spectrum for mobile use has further enhanced the incumbents' already considerable spectrum advantage over wireless competitors, especially in the mid-band, before the auction even begins.
44. We also note that Telus has recently gained access to more spectrum pursuant to a recently-approved subordination from TerreStar.<sup>22</sup> Under that approval, Telus gains access to 20 MHz of AWS-4 spectrum in 14 markets across Canada. This puts new competitors at an even greater spectrum disadvantage relative to the Big 3.
45. The spectrum disadvantage faced by new competitors, such as Shaw, has a significant effect on their relative deployment costs, deployment timelines and ability to take advantage of different frequency bands to optimize network speed, quality, capacity, coverage and ultimately, the customer's experience, compared to the incumbents. This asymmetry will negatively impact the ability of facilities-based competitors to deploy robust 5G networks in a timely manner to compete with the incumbents.
46. The Big 3 are in an ideal position to leverage their substantial spectrum holdings as well as their advantages in network infrastructure and support structures to dominate the 5G environment. The incumbents will be able to offer 5G services that competitors with smaller holdings would not be able to offer. The incumbents will also be able to launch new services earlier than their competitors.
47. The best way to overcome the dominance of the Big 3 and ensure that the facilities-based wireless competitors can compete effectively in 5G is to get more spectrum into the hands of the competitors. In particular, facilities-based wireless competitors like Shaw need timely access to important 3500 MHz mid-band spectrum to build and deploy their 5G networks.

**C. Without A Set Aside, the Big 3 will foreclose strong new competitors from 5G**

48. The 3500 MHz auction can be seen as an opportunity to promote 5G investment and ensure a competitive and dynamic 5G environment. It can also be seen as a risk to the prospects for a competitive wireless market in the future – the Big 3 know that if they can stop new competitors from securing 3500 MHz spectrum, they can shut them out of 5G and in turn shut them out of the wireless industry.

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<sup>22</sup> ISED, *Subordination of Licences Held by TerreStar to TELUS*, July 2019, online: <http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11533.html>.

49. As stated by Professor Peter Cramton, 3500 MHz spectrum is considered the “beachfront property of 5G.”<sup>23</sup> The 3500 MHz band is the lowest frequency band where 5G can be deployed with large channel bandwidths, making it one of the best bands for deployment of 5G New Radio technology. It also has a number of unique characteristics that make it a crucial complement to low-band and high-band spectrum, including: (i) versatility to allow for deployments of larger cells, as well as macro, small cell and indoor applications; (ii) consistent signal performance and connectivity, which significantly improves the connectivity experience; and, (iii) simple antenna design and ease of integration into future 5G devices. With its higher capacity levels, 3500 MHz spectrum is the ideal complementary spectrum to low frequency spectrum needed to provide 5G services.<sup>24</sup>
50. In order to compete effectively in 5G, competitors require access to 3500 MHz spectrum. However, given the critical role of 3500 MHz spectrum, which the Big 3 have touted publicly,<sup>25</sup> and the increasing threat that new competitors like Shaw pose to the Big 3’s dominant positions, the Big 3 are more incented than ever to foreclose competition in the 5G mobile market by limiting the blocks that competitors can win.<sup>26</sup> The Big 3 would also be *able* to foreclose competition as a result of their dominance. They have the ability and incentive to foreclose competitor entry into the 5G market and to preserve their market power. As corroborated by Professor Cramton, this foreclosure risk is real, and well-crafted pro-competitive measures can help curb this risk, which in turn can increase competition in both the market as well as the spectrum auction itself.<sup>27</sup>
51. There are other empirical examples of the foreclosure risk. In the 2008 AWS-1 auction in Canada, despite actively bidding to acquire open (non-set-aside licences), the new entrants won only seven (7) very insignificant such licences in the AWS-1 band. In that auction, the incumbents also managed, in effect, to not compete against one another in any given licence area, and effectively competed only against new entrants.
52. The Canadian 700 MHz spectrum auction, which included a spectrum cap mechanism rather than a set-aside, provides an illustration of the power of the national incumbents in a spectrum auction.

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<sup>23</sup> Cramton (July 2019), pages 2 and 4.

<sup>24</sup> Cramton (July 2019), page 4.

<sup>25</sup> Emily Jackson, “A very critical time’ – The next 12 to 24 months will define Canada’s digital future: Rogers,” *The Financial Post*, 22 April 2019, online: <https://business.financialpost.com/telecom/a-very-critical-time-the-next-12-or-24-months-will-define-canadas-digital-future-rogers>; Nicole Gibillini, *Full Huawei ban not a real worry, says BCE CEO George Cope*, BNN Bloomberg, 8 February 2019, online: <https://www.bnnbloomberg.ca/full-huawei-ban-not-a-real-worry-says-bce-ceo-1.1211509>; and TELUS Corporation, “Edited Transcript of Telus Corp earnings conference call or presentation Thursday, February 14, 2019,” *Yahoo! Finance*, 21 February 2019, online: <https://finance.yahoo.com/news/edited-transcript-t-earnings-conference-190943703.html>

<sup>26</sup> Cramton (July 2019), pages 1, 3 and 4: The concern is that the dominant incumbents would inflate bids for 3500 MHz spectrum to exclude competitors.

<sup>27</sup> Cramton (July 2019), pages 3 to 5.



In this auction, the national wireless incumbents won 85% of the spectrum by MHz/pop, including 100% of the most sought after lower paired blocks (A, B, and C). The four regional operators at the time – Videotron, Eastlink, MTS and Sasktel – were relegated to the much less desirable upper C1 block that was a distant third choice for each of the incumbents.

53. The PCS band is another example of this foreclosure risk. As noted previously, the Big 3 control almost all PCS spectrum in Canada. Not only did they receive some PCS spectrum for free, but they also acquired substantially all of the spectrum available in the PCS auction.<sup>28</sup> In spite of the Government's original intentions, the Big 3 were successful in establishing their dominance of the band and a significant advantage in mid-band spectrum holdings. This illustrates both their incentive and ability to do whatever they can to establish and maintain their dominance.
54. This is consistent with the Department's view that the wireless incumbents, "likely have the means and the incentive to prevent other service providers from acquiring spectrum licences in an open auction."<sup>29</sup>
55. The Department must therefore adopt a set-aside in the 3500 MHz auction in order to ensure that wireless competitors, particularly facilities-based wireless competitors, have access to sufficient 3500 MHz spectrum to effectively compete in 5G against the incumbents who already have a significant spectrum advantage over the competitors and have an incentive to foreclose the competitors' access to the spectrum in the auction.
56. If the Department does not adopt a set-aside, there is a serious risk that wireless competitors will be shut-out of initial 5G deployments and lose important ground to the wireless incumbents. This will jeopardize the real progress that facilities-based competitors have made to bring competition and innovation to the wireless market and would be a significant step back as the wireless industry enters the 5G era.
57. The Big 3 will inevitably argue that new entrants have already been given sufficient access to spectrum, for example, through the 600 MHz licensing framework. In that proceeding, the Department took a significant step toward promoting competition in the wireless market. However, given the importance of 3500 MHz spectrum for 5G, such arguments ignore the reality that without access to 3500 MHz spectrum, the progress of new competitors like Shaw in bringing competition to the wireless market will be lost, and the Department's efforts will be rendered ineffective.

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<sup>28</sup> Industry Canada, PCS Spectrum Auction Results, 15 January 2001, online: <http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf05388.html>

<sup>29</sup> SLPB-002-19, paragraph 28.

Additionally, such arguments ignore the extent to which the Big 3 dominate spectrum holdings in Canada.

58. In fact, Bell did not acquire any 600 MHz spectrum in the 600 MHz auction, even though Bell argued vigorously against set-asides in the auction.<sup>30</sup> After the auction, Bell announced that it decided not to acquire any 600 MHz spectrum because it has sufficient spectrum assets in the low, mid and high frequency bands in both urban and rural locations and did not require additional low-band spectrum to deliver broadband 4G and 5G services.<sup>31</sup> As Shaw argued in the 600 MHz proceeding, a similar story played out in the U.S., where Verizon and AT&T did not show up to the auction because they already had enough spectrum. As Professor Cramton notes, the wireless incumbents' plan in both Canada and the U.S. was to "refarm" their substantial existing low-band spectrum holdings for 5G use instead of bidding for additional spectrum.<sup>32</sup> In other words, the incumbents, such as Bell, argued against a set-aside not because they genuinely needed additional low-band spectrum for 5G, but rather for the opportunity to foreclose new competitors from accessing the much-needed spectrum.<sup>33</sup> Accordingly, any arguments by the Big 3 that they require more spectrum than new competitors to deliver 5G should not be given any weight.
59. Prior to the 600 MHz proceeding, the incumbents held almost all of the available low-band spectrum available for mobile use – the same can be said with respect to mid-band spectrum. As noted, a diversity of spectrum holdings, including mid-band holdings, is necessary for delivering a competitive 5G alternative. Even if the Department adopted pro-competitive measures in this proceeding, regional competitors would still be nowhere near parity, both with respect to mid-band holdings and overall holdings. Most importantly, such arguments ignore what is best for Canada. As noted previously, competition drives innovation, choice, and affordability, all of which will be compromised if new competitors are not given equitable access to this spectrum.
60. The Big 3 may also argue that the set-aside distorted the 600 MHz auction. As Professor Cramton explains, this is a mischaracterization.<sup>34</sup> As the results show, the Big 3 priced each other in that auction, and the set aside did not diminish the competitiveness of the auction. More importantly, as noted above, the auction results were good for Canada.

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<sup>30</sup> For example, Bell Initial Comments, ISED *Consultation on a Technical, Policy and Licensing Framework for Spectrum in the 600 MHz Band*, at paras 8 to 16.

<sup>31</sup> BCE, "Bell update on federal auction of 600 MHz spectrum," *News Release*, 10 April 2019, online: <http://www.bce.ca/news-and-media/releases/show/Bell-update-on-federal-auction-of-600-MHz-spectrum-1>

<sup>32</sup> Cramton (July 2019), page 5.

<sup>33</sup> Cramton (July 2019), page 5.

<sup>34</sup> Cramton (July 2019), page 5.

61. To summarize, given the importance of this spectrum for 5G, combined with the dominant position of the incumbents and their significant mid-band spectrum advantage that they enjoy, the Big 3 national incumbents are highly incented and able to foreclose strong new competitors from obtaining 3500 MHz spectrum. This would result in a static, uncompetitive 5G environment to the detriment of Canadians and the Canadian economy. If the Big 3 succeed in extending their dominance to 5G, the enormous potential of a dynamic, transformative 5G environment will be lost. Canadians and Canada will instead be left with a static, unresponsive market similar to the past.
62. The pro-competitive proposal outlined in the following section will help ensure that facilities-based competitors have access to sufficient 3500 MHz spectrum and are not foreclosed from the band or 5G.

### **III. SHAW'S PROPOSAL TO SUSTAIN COMPETITION**

#### **A. A Balanced, Equitable Set-Aside Proposal**

63. A well-crafted set-aside will enhance competition for 5G wireless services, address the foreclosure risk outlined above, and increase competition in the 3500 MHz auction.<sup>35</sup> This is especially important considering that wireless incumbents will have access to significant 3500 MHz spectrum through the reclamation process before the auction even begins.
64. Shaw's proposal for the spectrum set-aside is as follows:
- (a) 50 MHz in all Tier 4 service areas where at least 80 MHz of spectrum is available for auction;
  - (b) 40 MHz in the areas that are listed in Annex G of the Consultation Document as large population centers where less than 80 MHz of spectrum is available; and,
  - (c) 50% of the available spectrum in all areas not listed in Annex G of the Consultation Document where less than 80 MHz of spectrum is available.

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<sup>35</sup> Cramton (July 2019), page 6.

**Table 1: Shaw Spectrum Set-Aside Proposal**

<b>Amount of Spectrum Available for Auction in Tier 4 Service Area</b>	<b>Population of Tier 4 Service Area</b>	<b>Amount of Set-Aside</b>
≥ 80 MHz	N/A	50 MHz
< 80 MHz	Large population centers as set out in Annex G	40 MHz
< 80 MHz	Areas not listed as large population centers in Annex G	50% of Available Spectrum

65. A differentiated approach by area is required because, as a result of the Reclamation Decision, there will not be a uniform amount of spectrum available for auction in each service area, with some service areas having as little as 30 MHz of spectrum available for auction and other service areas having the full 200 MHz of spectrum available for auction.<sup>36</sup>

66. The set-aside spectrum should consist of spectrum blocks that are not encumbered by existing sub-divided or grid cell licences. Only where there are insufficient unencumbered blocks should encumbered blocks be assigned to the set-aside, and in those cases, the least encumbered blocks should go toward the set-aside. This will allow the wireless competitors to compete on a level playing field with licensees that already have spectrum holdings in the band.

**B. Shaw’s Set-Aside Proposal Will Promote Competition in 5G**

67. The Canadian and international experience with set-asides demonstrates that they have been an effective mechanism of promoting competition and the efficient distribution of spectrum in spectrum auctions and in the market for wireless services.<sup>37</sup> For example, in Canada, set-asides in the AWS-1, AWS-3 and 600 MHz spectrum auctions have enabled the regional providers, such as Freedom Mobile, Videotron and Eastlink to emerge as legitimate, albeit small, contenders to the Big 3 and to punch above their weight class.<sup>38</sup>

68. 3500 MHz mid-band spectrum is recognized internationally as a primary 5G band that is suitable for the near-term deployment of 5G technologies. The spectrum is important for offering a combination of wide-area coverage and good capacity for 5G services, which requires access to large blocks of contiguous spectrum.

<sup>36</sup> Cramton (July 2019), page 6.

<sup>37</sup> Cramton (July 2019), pages 6, 8 and 9.

<sup>38</sup> Cramton (July 2019), pages 8 and 9.

69. Shaw is proposing that the Department set-aside 50 MHz of spectrum in all Tier 4 service areas where at least 80 MHz of spectrum is available for auction (i.e., 126 service areas). According to Professor Cramton, the set-aside should be substantial in size – ideally one-quarter (50 MHz) of the 200 MHz available - in order to be most effective.<sup>39</sup> Although more than 50 MHz of mid-band spectrum is needed to sustainably compete in 5G with the wireless incumbents, which enjoy a considerable spectrum advantage, we recognize the challenges in setting-aside additional spectrum in the present auction with the presence of existing licensees in the band in certain areas. Our proposal ensures that at least one facilities-based competitor will obtain the spectrum needed to compete against the dominant incumbents.<sup>40</sup>
70. A 50 MHz set-aside in the 3500 MHz spectrum band will provide the facilities-based wireless competitors with the mid-band capacity needed to invest in 5G, deploy 5G new radio technology and launch new 5G mobile services.<sup>41</sup> Our set-aside proposal ensures that the facilities-based competitors can obtain access to sufficient 3500 MHz spectrum to effectively compete in 5G while still providing the wireless incumbents and other entities with an opportunity to acquire mid-band spectrum holdings through open bidding. According to Professor Cramton, this will expand 5G coverage beyond the Big 3 and make the downstream market for 5G services more competitive.<sup>42</sup>
71. Shaw highlights that a set-aside of 50 MHz is reasonable given that it represents only 25% of the total amount of spectrum in the 3500 MHz band (200 MHz). This is well below some previous spectrum set-asides, including the 2008 AWS-1 auction, where approximately 40% of the available spectrum was set-aside, the 2015 AWS-3 auction, where approximately 60% of the available spectrum was set-aside and the recent 600 MHz auction, where approximately 43% of the available spectrum was set-aside.<sup>43</sup>
72. It is also reasonable given incumbent licensees' ability to retain spectrum through the reclamation process. A 50 MHz set-aside will not restrict the supply of spectrum available in the 3500 MHz band since many entities, including the wireless incumbents, already have substantial spectrum holdings in the band.
73. Most notably, Bell and Rogers will be eligible for flexible use licences in 157 of the 172 proposed Tier 4 service areas through their interest in Inukshuk.<sup>44</sup> As a result of this windfall, Bell and Rogers

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<sup>39</sup> Cramton (July 2019), page 2.

<sup>40</sup> Cramton (July 2019), page 6.

<sup>41</sup> Cramton (July 2019), page 2.

<sup>42</sup> Cramton (July 2019), page 2.

<sup>43</sup> SLPB-002-19, paragraph 31.

<sup>44</sup> SLPB-002-19, Appendix A1.

will each have 25 MHz or 30 MHz of spectrum<sup>45</sup> as a starting point in the 3500 MHz band in the majority of service areas, including 30 MHz in all major urban areas<sup>46</sup>, before the auction even commences.

74. Despite their up-front advantage, the wireless incumbents will still be able to bid on between 30 MHz and 150 MHz of spectrum in each service area with a 50 MHz set-aside, including 150 MHz in Victoria, 90 MHz in Toronto, Vancouver, Montreal, Quebec and Halifax, 70 MHz in Calgary and 40 MHz in Winnipeg, Ottawa, London and Guelph/Kitchener (subject to the proposed in-band spectrum cap).<sup>47</sup>
75. With the amount of spectrum available for open bidding, all of the wireless incumbents will be able to add to their already substantial spectrum holdings across all bands and obtain any additional spectrum they need to improve network quality and capacity. In fact, the incumbents will continue to hold and have access to more 3500 MHz spectrum across the country after the auction than any one of the facilities-based competitors could realistically obtain, given the incumbents' existing spectrum holdings in the band, their already-significant mid-band holdings, and the extensive spectrum sharing arrangement between Bell and Telus as detailed in paragraphs 40 – 43 above.
76. Although a set-aside of at least 50 MHz is needed to enable facilities-based wireless competitors to effectively support 5G services and applications, we recognize that applying a set-aside of 50 MHz in all service areas would be unworkable. We have therefore proposed a tailored approach to ensure that there is a sufficient and proportional amount of set-aside spectrum in service areas where there is a limited amount of spectrum available for auction (i.e., less than 80 MHz of spectrum), while accounting for the need for more capacity in urban centers.
77. Accordingly, Shaw is proposing that, where less than 80 MHz of spectrum is available in areas that are considered large population centers as set out in Annex G of the Consultation Document, the Department set-aside 40 MHz. Our proposal reflects the need for facilities-based competitors to have as much capacity as possible in urban centers to meet 5G demand, despite the limited amount of spectrum available for auction because of the reclamation process. A spectrum set-aside of less

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<sup>45</sup> SLPB-002-19, Appendix A1: Inukshuk is eligible to retain between 20 MHz and 60 MHz of spectrum in the 3500 MHz band, with the majority of Inukshuk's licences allowing it to retain 50 MHz or 60 MHz of spectrum in each service area.

<sup>46</sup> Inukshuk is eligible for 60 MHz of spectrum in Halifax, Quebec, Montreal, Ottawa, Toronto, Winnipeg, Edmonton, Calgary and Vancouver. See SLPB-002-19, Appendix A1.

<sup>47</sup> The figures were arrived at by subtracting the proposed set-aside amount of 50 MHz from the spectrum available for auction in each service area as set out in Appendix A1 of the Consultation Document.

than 40 MHz in an urban area would make it difficult for facilities-based competitors to effectively deploy 5G technologies and networks in these high-demand areas.

78. Under our proposal, 40 MHz would be set-aside in Tier 4 service areas that are large population centers as set out in Annex G. An example of a market in which this would apply is Edmonton. In that market, we believe that the 40 MHz proposed set-aside amount is reasonable and necessary because each of the wireless incumbents will already have at least 30 MHz of spectrum in the service area as a result of their existing spectrum licences in the band. Inukshuk is eligible to retain 60 MHz of spectrum (i.e., Bell and Rogers could have 30 MHz each), TELUS is eligible to retain 50 MHz of spectrum and Xplornet is eligible to retain 50 MHz of spectrum.<sup>48</sup> Without a 40 MHz set-aside in Edmonton, the wireless incumbents would be able to increase their spectrum capacity advantage in an important urban center and foreclose competition by the facilities-based wireless competitors in 5G in this market.
79. Finally, Shaw proposes that the Department set-aside 50% of the spectrum available for auction in all other areas (i.e., those not listed on Annex G) where less than 80 MHz of spectrum is available for auction. A percentage-based set-aside in these areas ensures that there is a proportional amount of spectrum set-aside in rural service areas where there is limited spectrum available for auction.
80. Unlike the wireless incumbents, the facilities-based wireless competitors do not have any existing 3500 MHz spectrum holdings. As ISED acknowledges, the wireless incumbents likely have the means and incentive to prevent the competitors from acquiring 3500 MHz spectrum in an open auction.<sup>49</sup> If the competitors do not obtain sufficient mid-band spectrum in this auction, there is a real risk that they will not be able to deliver the bandwidth needed for 5G. This will give the wireless incumbents a commanding head-start in the deployment of 5G technology and weaken the prospects for sustained competition in the evolution of 5G services. It is therefore imperative that the Department adopt the above set-aside proposal.

**C. An In-Band Spectrum Cap to Avoid Concentration and Preserve Set-Aside Integrity**

81. In addition to the spectrum set-aside, Shaw proposes that the Department apply an in-band spectrum cap of 50 MHz in all Tier 4 service areas. Our proposed cap would supplement, but is not a substitute for, the set-aside. Under our proposal, a licensee would not be eligible to acquire spectrum licences in services areas where the spectrum cap of 50 MHz has been met or exceeded.

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<sup>48</sup> SLPB-002-19, Appendix A1.

<sup>49</sup> SLPB-002-19, paragraph 28.

82. The additional in-band spectrum cap that Shaw has proposed will help prevent excessive concentration of spectrum and the risk of foreclosure<sup>50</sup>, allowing multiple service providers to gain access to 3500 MHz spectrum and to compete in 5G. Given the importance of the 3500 MHz spectrum band for 5G, and that it is unclear when, and how much, spectrum will be available in the future, it is important that the band be available to multiple service providers. Our proposal for a 50 MHz cap provides an opportunity for all carriers, whether regional competitors or the Big 3 national incumbents, to gain access to this spectrum.
83. Additionally, a 50 MHz spectrum cap will further preserve the integrity and intention of the set-aside, while respecting the goal of ensuring that existing FWA holders are able to continue delivering their fixed services with the spectrum that they have retained under the Reclamation Decision. In the proceeding leading to the Reclamation Decision, FWA licensees made arguments that they need to retain their licences to continue providing fixed services. However, absent a cap, those parties may be incented to liquidate their holdings to the Big 3, who would pay a premium for them to block new competitors from gaining access. This outcome would run contrary to the purpose of the set-aside and the Reclamation Decision, as it would enable the Big 3 to gain an advantage in the band.
84. In addition, a 50 MHz in-band spectrum cap will ensure that a licensee is not able to acquire a disproportionate amount of 3500 MHz spectrum in the band, which would lead to uncompetitive outcomes. This is especially important because of the reclamation process. Without a spectrum cap, incumbent FWA licensees that are eligible for flexible use licences for up to 60 MHz of spectrum in the band would be able to add to their already significant spectrum holdings. This would enable a licensee to build a commanding lead in the capacity needed for 5G and offer 5G services that certain competitors with smaller holdings would not be able to offer. As there are some markets where Big 3 incumbents do not have 3500 MHz spectrum today, the cap would prevent their respective competitors from acquiring a disproportionate amount.
85. Shaw further notes that the adoption of both a set-aside and a cap would be reasonable in light of international precedents. For example, the 2013 LTE auction in the United Kingdom included both caps and a dynamic set-aside for non-incumbent providers.<sup>51</sup> Such an approach would also be a reasonable approach given the excessive concentration of spectrum in Canada (as detailed previously) and the dynamics of this band in particular, with multiple parties coming into the auction already having significant access to the band.

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<sup>50</sup> Cramton (July 2019), page 2.

<sup>51</sup> Ofcom, *Assessment of future mobile competition and award of 800 MHz and 2.6 GHz*, Statement, 12 January 2012, online: <https://www.ofcom.org.uk/consultations-and-statements/category-1/award-800mhz-2.6ghz>



86. A 50 MHz in-band spectrum cap will promote competition and prevent one or two entities from dominating the wireless market as service providers develop and deploy 5G technologies, while still enabling licensees to acquire sufficient spectrum to meet their capacity requirements.

#### **IV. ELIGIBILITY TO BID ON SET-ASIDE SPECTRUM**

87. Shaw supports ISED's proposal to limit the eligibility to bid on set-aside spectrum licences to those registered with the CRTC as facilities-based providers, which are not national mobile service providers (NMSPs), and that are actively providing commercial telecommunication services to the general public in the relevant Tier 2 area of interest effective as of the date of the application to participate in the 3500 MHz auction.<sup>52</sup>
88. However, Shaw believes that the proposed eligibility requirements should be further clarified to ensure that the ability to bid on-set aside spectrum is limited to facilities-based competitors that have shown a commitment to furthering the objectives set out in the Consultation Document, including ensuring timely deployment of services and driving sustainable competition. Accordingly, only applicants that already provide commercial mobile wireless services should be permitted to bid on set-aside spectrum.
89. Shaw proposes that the eligibility test proposed by the Department be modified to require that an applicant that wishes to bid on set-aside spectrum provide proof that it is actively providing commercial mobile wireless services in Canada using a radio access network that it owns and operates. The assessment of "active provision of commercial wireless services" would require an applicant for the set-aside spectrum to file evidence with the Department relating to the commercial mobile wireless services that it offers, the retail/distribution network used to offer the services in Canada and the means by which subscribers access services and the number of subscribers.
90. Limiting the eligibility to bid on set-aside spectrum to commercial mobile wireless service providers is consistent with the Department's policy objectives for the 3500 MHz spectrum band. The purpose of the Department's decision to implement a fundamental reallocation of the 3500 MHz band to allow mobile services was to address the growing demand for commercial mobile broadband services<sup>53</sup> and support the objective set out in the Consultation Document of timely deployment of next-generation 5G mobile wireless technologies. Requiring set-aside bidders to be actively providing commercial mobile services will ensure that this spectrum is used to provide more capacity for mobile services as service providers roll-out 5G networks.

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<sup>52</sup> SLPB-002-19, paragraph 39.

<sup>53</sup> Industry Canada, *Decisions Regarding Policy Changes in the 3500 MHz Band (3475-3650 MHz) and a New Licensing Process*, 18 December 2014, paragraph 22..

91. We recognize that fixed wireless services are a key component of providing broadband Internet connectivity to rural homes and businesses across Canada. However, there is already sufficient spectrum available in the 3500 MHz band for fixed wireless services, including 5G fixed wireless service, and it is unnecessary for the Department to set-aside additional spectrum for fixed wireless service providers.<sup>54</sup> We note that as part of the Department's decision to reallocate the 3500 MHz band, incumbent FWA licensees will be eligible for flexible use licences that will enable them to retain a sizable amount of their existing spectrum holdings to continue to provide fixed wireless services if they choose to. The Department's focus in this auction should be on enhancing access to, and competition in, mobile broadband services, including in rural areas.
92. In addition, limiting set-aside bidding to entities that are providing commercial mobile wireless service will provide the entities that are best positioned to compete in the retail mobile services market against the Big 3 with access to the spectrum. The Department's purpose for implementing spectrum set-asides is to address the market power of the Big 3 in the provision of retail mobile wireless services and enable competition.<sup>55</sup> New wireless competitors like Freedom have demonstrated the ability to deploy mobile wireless networks in a timely manner, offer innovative mobile services to subscribers and compete with the Big 3 in various markets, despite facing a variety of barriers to competition. These competitors will be better able to deliver effective and sustained competition in the post-auction marketplace, including in rural areas.
93. Finally, the mobile service providers that are already in the process of building and expanding their networks will ensure that the set-aside spectrum is deployed in a timely manner in urban and rural areas. Ensuring timely deployment and deterring speculation for set-aside spectrum is especially important for the 3500 MHz auction considering that the Department is proposing to use Tier 4 service areas for the licensing process.<sup>56</sup> With smaller licence areas, there is greater potential for speculative behaviour.
94. We note in particular that the deployment rate for fixed wireless services in the 3500 MHz band was low (under 50%), even though licensees had fifteen years since the spectrum was first auctioned to use it.<sup>57</sup> Almost half of the licences in the band went unused by incumbent FWA

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<sup>54</sup> The Department, "is of the view that the ability to bid on set-aside spectrum should be limited to a particular sub-set of service providers that are best positioned to compete in either the commercial mobile services market or as rural wireless Internet service providers." See SLPB-002-19, paragraph 39.

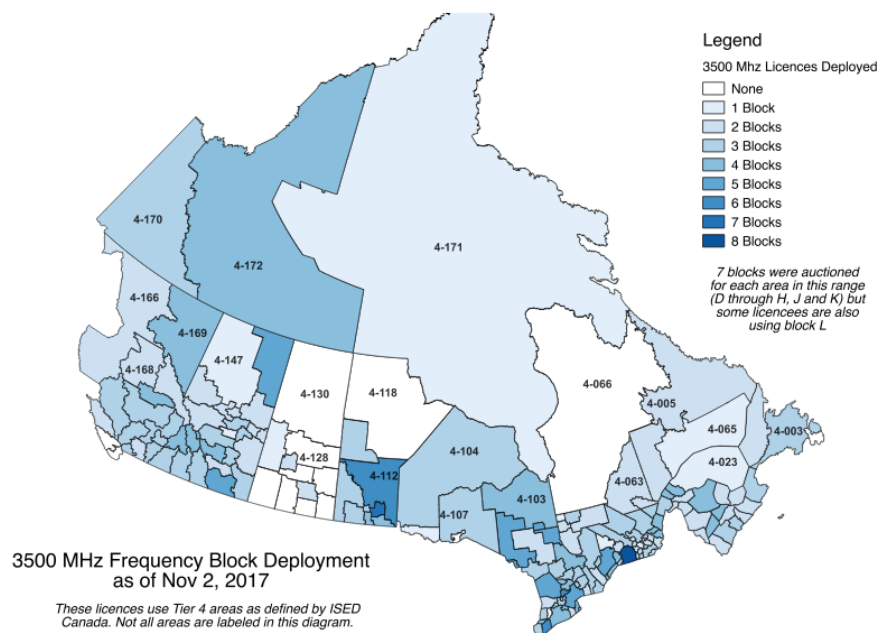
<sup>55</sup> SLPB-002-19, paragraph 28.

<sup>56</sup> SLPB-002-19, paragraph 50.

<sup>57</sup> Kris Joseph, *Analysis of Canadian Wireless Spectrum Auctions: Licence Ownership and Deployment in the 700 MHz, 2500 MHz and 3500 MHz Frequency Ranges*, CRTC Prize for Excellence in Policy Research 2018 ("Kris Joseph 2018"), online: <https://crtc.gc.ca/eng/acrtc/prx/2018joseph.htm>

licensees.<sup>58</sup> According to the Department, at least twenty-six 3500 MHz fixed wireless service licences that were licensed using Tier 4 service areas reverted to the Department for non-compliance and numerous licences transitioned to grid cell based licences where deployment conditions were only partially met.<sup>59</sup> The lack of deployment in Tier 4 service areas by fixed wireless service providers, particularly in rural areas, is shown below in Figure 'X' – Licence Usage in the 3500 MHz Range. The Department, and the wireless sector, cannot afford the same outcome for the set-aside spectrum.

**Figure 'X': Licence Usage in the 3500 MHz Range**



Source: Kris Joseph, *Analysis of Canadian Wireless Spectrum Auctions: Licence Ownership and Deployment in the 700 MHz, 2500 MHz and 3500 MHz Frequency Ranges*, CRTC Prize for Excellence in Policy Research 2018, Figure 4 <online: <https://crtc.gc.ca/eng/acrtc/prx/2018joseph.htm> >

95. To summarise, Shaw proposes that eligibility to bid on set-aside spectrum in any licence area be limited to persons or entities that are, as of the deadline for the submission of applications to the Department to bid on 3500 MHz auction:

<sup>58</sup> Kris Joseph 2018.

<sup>59</sup> ISED, *Consultation on Revisions to the 3500 MHz Band to Accommodate Flexible Use and Preliminary Consultation on Changes to the 3800 MHz Band*, SLPB-004-18, June 2018 (“SLPB-004-18”), paragraphs 29 and 30.

- (a) Licensees of commercial mobile terrestrial spectrum that are actively providing commercial wireless services to the public somewhere in Canada using radio access network facilities that are owned and operated by the entity in question;
- (b) Not a national mobile service provider (i.e., any entity with more than 10% of national wireless subscriber market share);
- (c) Registered with the CRTC as a facilities-based carrier; and
- (d) Actively providing commercial telecommunications service to the public in the relevant Tier 2 licence area using access facilities that the person or entity, or its affiliates, owns and operates.

## **V. DEPLOYMENT OBLIGATIONS SHOULD NOT UNDERMINE COMPETITION**

96. As noted previously, Shaw supports the Department's objective of ensuring timely deployment of 5G technologies.<sup>60</sup> Shaw also supports the intention of the Department's deployment objectives, including encouraging licensees to put spectrum to use and to deter acquisition of spectrum licences by speculators.<sup>61</sup> Indeed, it is these principles that have guided our proposal in the previous section to limit eligibility to bid on set-aside spectrum to those that have shown a commitment to providing wireless services to Canadians.
97. Shaw supports the proposed general deployment obligations set out in Annex F of the Consultation Document. Those obligations are reasonable, equitable and promote the Department's stated objectives.
98. However, Shaw objects to the Department's proposal to adopt additional, unduly onerous requirements for those that currently operate a mobile LTE network, particularly new competitors that are overcoming barriers to challenge the Big 3.<sup>62</sup> The Department proposes that such providers must meet the following deployment requirements "regardless of the service that they plan to deploy using the licence": (i) 90% coverage of their mobile LTE footprint as of June 5, 2019 within 5 years; (ii) 97% coverage of their mobile LTE footprint as of June 5, 2019 within 7 years; and, (iii) in areas with at least one large population center as set out in Annex G, 95% coverage of the population outside the large population center within 10 years.

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<sup>60</sup> SLPB-002-19, paragraphs 11 and 172.

<sup>61</sup> SLPB-002-19, paragraph 168.

<sup>62</sup> SLPB-002-19, paragraph 171.

99. In contrast to the proposed general deployment obligations in Annex F, the additional requirement is impractical, inequitable and will detract from the Department's stated objectives.
100. With respect to the requirements to cover a significant portion of a providers' LTE footprint, the breadth of many LTE footprints are enabled by the use of low-band spectrum, which has unique propagation characteristics. Since the 3500 MHz band does not propagate as far as low-band spectrum, including the 700 MHz band which is currently Shaw's lowest deployed band supporting our LTE services, many more macro sites will be required to provide mobile services to such high coverage levels. This requirement will result in 3.5 GHz network infrastructure being deployed in areas where it is simply not required, including low-density areas already being adequately served by existing LTE bands, and will divert network investment from other areas where the need is more critical.
101. With respect to the requirement to cover 95% of the population in areas outside of large urban centers within 10 years, this represents an enormous capital investment, particularly for new competitors like Shaw that do not enjoy the decades-long head start that the Big 3 have. It also creates arbitrary, significant distinctions between different areas that are similar in population density. For example, under the proposed requirement, the minimum population coverage in more-rural areas outside of Calgary would be 95% within 10 years, whereas the minimum coverage in Red Deer would be significantly less (25%, 40% and 60% within 5, 10 and 20 years, respectively). This is notwithstanding the fact that the rural areas outside of Calgary are no more densely populated than Red Deer.
102. Shaw has invested well over \$3 billion in wireless since acquiring WIND just over 3 years ago. This includes significantly expanding our network to cover an additional 1.3 million Canadians who live in non-urban centers in B.C., Alberta and Ontario. These investments have allowed us to challenge the *status quo* in the wireless industry and deliver the benefits of facilities-based competition to millions of Canadians. It makes little sense to penalize parties, like Freedom, that are still in the growing stages but that have shown a commitment to deploying wireless services. Imposing the more onerous additional deployment requirements on these new regional competitors, but not on parties that have shown no such commitment, creates unnecessary risk for long-term competition and deployment.
103. The requirement would disproportionately harm new competitors like Shaw, who, as previously stated, already face high costs of deployment as a result of our spectrum disadvantage. As Professor Cramton explains,<sup>63</sup> unlike the Big 3 such competitors are in the process of expanding

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<sup>63</sup> Cramton (July 2019), page 9.

their networks and already have a much higher intensity of capital investment relative to revenues – 2.4 times the intensity of investment of the Big 3. Additionally, as stated, the Big 3 have a decades-long head-start, including with respect to infrastructure in rural areas. This puts new entrants at a significant competitive disadvantage to the Big 3, which have had years to build out mobile wireless networks in rural areas. The requirement would represent yet another hurdle to those that are challenging the Big 3's dominance. As we will discuss later, adding to the challenge for new competitors is the fact that under the proposal in the Consultation Document the relevant timeframe for deployment starts on the date that the licence is issued, notwithstanding that the licensee may not be able to begin its deployment efforts for some months in light of the transition process.

104. The requirement would also disproportionately harm those that are not existing licensees in the band and have not already received a windfall through the reclamation process. As stated in the Consultation Document, providers can satisfy the requirements “regardless of the service that they plan to deploy using the licence”.<sup>64</sup> In other words, existing holders can satisfy the requirements by leveraging their fixed services, which include high gain antennas and high-power transceivers that can be used to extend the 3500 MHz coverage area. In contrast, new competitors like Shaw would be starting from scratch.
105. In light of this disproportionate harm on new competitors like Shaw that are not existing licensees, the Department's proposal will detract from the Department's stated objective of promoting competition in 5G. Additionally, the requirements would detract from the Department's stated objective of ensuring timely deployment of 5G and promoting mobile connectivity in rural areas. In particular, given the onerous nature of these requirements, parties may be incented to deploy fixed services under their flexible use licenses. In other words, the deployment requirements would have the unintended consequence of influencing a provider's decision as to what service to provide to consumers. In Shaw's view, providers should be deciding what services to provide based on what Canadian consumers want, not based on unreasonable deployment requirements.
106. In light of the above, the Department must refrain from adopting the proposed additional deployment requirements.

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<sup>64</sup> SLPB-002-19, paragraph 171.

**VI. OPENING BID PRICES MUST BE SET TO PROMOTE COMPETITION IN THE AUCTION AND POST-AUCTION MARKET**

107. ISED proposes to base the opening bid prices, in \$/MHz-pop, on the opening bid prices it used for the auction of 2500 MHz spectrum in 2015 except in service areas with populations over 2 million. The prices would be calculated as follows:

- (a) service areas with populations greater than 2 million: \$0.232/MHz-pop
- (b) service areas with populations between 1 and 2 million: \$0.1/MHz-pop
- (c) service areas with populations less than 1 million that contain one or more Census Metropolitan Area(s) (CMA): \$0.065/MHz-pop
- (d) all other service areas: \$0.051/MHz-pop

108. Using the data presented in tables A1 and D1 of the consultation, we calculate the nationwide average \$/MHz-pop for all unencumbered blocks in all tier 4 service areas as \$0.147.

109. The table below presents final prices from recent auctions of 5G mid band spectrum. The prices range from as low as \$0.06, \$0.08, and \$0.09 in Finland, Spain, and Austria, respectively, to a high of \$0.54 in Italy. Many of the auctions to date have seen final prices significantly less than ISED's proposed opening bid prices, particularly for the most populated service areas priced at \$0.232.

**Final prices in \$CAD/MHz-pop from recent 5G mid band auctions**

<i>Country</i>	<i>Auction Date</i>	<i>Band(s)</i>	<i>\$/MHz-pop</i>
<i>Ireland</i>	May 2017	3.6 GHz	\$0.06
<i>United Kingdom</i>	May 2018	2.3 & 3.4 GHz	\$0.14, \$0.20
<i>South Korea</i>	June 2018	3.5 GHz	\$0.24
<i>Spain</i>	July 2018	3.6 GHz	\$0.08
<i>Italy</i>	September 2018	3.7 GHz	\$0.54
<i>Finland</i>	October 2018	3.5 GHz	\$0.06
<i>Australia</i>	December 2018	3.5 GHz	\$0.28
<i>Switzerland</i>	February 2019	700 MHz; 1.4, 2.6, & 3.5 GHz	\$0.13 (combined)
<i>Austria</i>	March 2019	3.6 GHz	\$0.09
<i>Germany</i>	June 2019	2 & 3.6 GHz	\$0.36, \$0.24

110. The data in the table indicates that the *final prices* for mid-band 5G spectrum in the 10 countries that have recently auctioned such spectrum are typically in the range of \$0.06 to \$0.24 per MHz-pop. Indeed, the average minimum opening bid price that ISED is proposing to adopt—\$0.147 per MHz-pop—exceeds the average sales price in five of the nine countries listed in Table 1. By comparison, minimum bid prices in Canada's 2500 MHz auction were \$0.102 per MHz-pop.

111. Therefore, in Shaw's view, the Department should lower the opening bid prices from \$0.147, on average, to be more in line with its 2500 MHz opening bid prices and to take into account final prices paid internationally. Shaw proposes that ISED achieve this reduction by reducing the opening bid price of \$0.232 per MHz-pop in service areas with populations over 2 million to the range of \$0.17. Shaw's proposal will promote competition in the auction (particularly for set-aside spectrum) as well as competition in highly populated areas by allowing new competitors to gain access.
112. In rendering its decision on the topic of opening bid prices, the Department must also consider the tremendous financial and other risks involved in building new wireless networks. Those risks have been amplified recently with uncertainty in the policy environment, caused, in particular, by the CRTC's preliminary view in its Wireless Review that the benefits of a mandated MVNO regime are likely to outweigh any negative impacts on network investment.
113. Notwithstanding the policy uncertainty, at this time, Shaw remains committed and able to invest to deliver the benefits of facilities-based competition to Canadians. However, we note that a regulatory regime that positions resale-based models at an advantage over facilities-based new competitors will undermine the economics of facilities-based investment generally and the prospects for sustainable competition in Canada.<sup>65</sup>

## **VII. ENSURING NO HEAD START ADVANTAGE IN 5G**

114. In order to promote a competitive 5G environment, the Department must take steps to ensure that existing licencees are not given a head-start advantage. In the absence of clear head-start rules that will spell out when existing 3500 MHz licencees can begin deploying the spectrum for mobile use before those that pay for them at auction. This will add to the advantages that existing licencees in the band will have as a result of receiving a windfall of mobile 5G spectrum.

### **A. Background**

115. Under the 3500 MHz Reclamation Decision,<sup>66</sup> fixed wireless incumbents retain extremely valuable amounts of 3500 MHz spectrum that they can use for mobile. The Department has also given to these incumbents the right to continue to provide FWA and to not convert, and where such operations would impinge on the ability of a competitor to deploy in a given service area,

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<sup>65</sup> Emch (May 2019), paragraphs 57 and 61 to 66.

<sup>66</sup> SLPB-001-19.



competitors are required to provide notification to the Department<sup>67</sup> as well as a protection<sup>68</sup> period on a “where and when necessary” basis.<sup>69</sup>

116. Additionally, regarding the timing of the issuance of flexible use licences, the Consultation Document states that:

“an existing licensee will be issued a flexible use licence in a given partial or full licence area only if a transition has been triggered and a date has been established for the termination of their fixed licence. The [existing] licensee will not be able to operate under both a fixed licence and a new flexible use licence in the same geographical area, except for a limited time within the transition period, which will be established by ISED where necessary.”<sup>70</sup>

117. Based on this, the “transition period” in a given area will be established on a case by case basis.<sup>71</sup> Determinations of the details of the specific procedures for triggering the transition (i.e., the procedures and timelines to apply for flexible use licences through the transition process<sup>72</sup> and the date of termination of fixed licences/issuance of flexible use licences in a given service area<sup>73</sup>) have been left to a further follow up proceeding that ISED will outline in a future public release and which will be published prior to the application deadline to participate in the auction.<sup>74</sup>
118. ISED has also indicated that it intends to retain oversight and will monitor the effectiveness of the transition or displacement of existing licensees and that where necessary, it is prepared to make changes to these provisions, along with making changes to licence conditions, if necessary.<sup>75</sup>

## **B. No Head Start Rule to Avoid Competitive Distortions**

119. As the Department itself has previously acknowledged,<sup>76</sup> existing licencees would have a significant competitive advantage were they to have the opportunity to deploy mobile services sooner than

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<sup>67</sup> SLPB-004-18, paragraphs 67 and 68: As proposed by the Department, the “notification period” is the period of notice that ISED will provide to incumbent licensees before they would be required to transition. In a given licence area, this period would be established by the Department upon application by a new licensee in which the new licensee would be required to “demonstrate to ISED the time frames required for the deployment of their planned systems, as well as the specific incumbent operations that would prevent deployment, including specific areas and spectrum frequencies.”

<sup>68</sup> SLPB-004-18, paragraph 65: The protection period is the minimum period of time during which the incumbent licensee would be protected from having to transition where their FWA operating systems would interfere with the planned deployment of another licensee. See SLPB-004-18, paragraph 65.

<sup>69</sup> SLPB-001-19, Decision D13 and paragraph 141.

<sup>70</sup> SLPB-001-19, paragraph 142.

<sup>71</sup> SLPB-004-18, paragraph 67.

<sup>72</sup> SLPB-001-19, Decision D13.

<sup>73</sup> SLPB-001-19, paragraph 142.

<sup>74</sup> SLPB-001-19, Decision, D13.

<sup>75</sup> SLPB-001-19, paragraph 147.

<sup>76</sup> SLPB-004-18, paragraph 56.

their future competitors in the 3500 MHz band. In finalizing the details of the transition, the Department must ensure that it does not enable any head start advantage.

120. The 3500 MHz Reclamation Decision suggests that existing licencees can be permitted to offer mobile services once their flexible use licence is issued.<sup>77</sup> However, new licencees will have to wait for the completion of a transition, which may not be complete until after the issuance of flexible use licences. The date of issuance of flexible use licences to incumbent licensees and the extent to which incumbent licensees would be permitted to offer mobile services during the notification period<sup>78</sup> remain undefined and ambiguous.
121. Shaw submits that the rules surrounding existing licensees' ability to offer mobile services in advance of their competitors in the 3500 MHz band requires clarification. Where existing licensees intend to voluntarily convert to flexible use licences, notification and protection rules must also be put into place in order to minimise the risk of unfair advantage:
- (a) First, just as new licensees are required to provide notification of their planned deployments where these will affect existing FWA deployments, existing licensees should be required to provide advance notification to the Department and to all licensees of where they intend to voluntarily convert their FWA licences to flexible use licences;
  - (b) Where the existing licensee has provided such notification of their intention to convert, the flexible use licence will be issued to them as of the date that they have indicated in their notification that they will convert. Existing licensees should not be able to operate under their flexible use licences until six months after the date that the flexible use licences have been issued; and
  - (c) Where the existing licensee has not provided a notice of intention to convert, the licensee will be entitled to the protection periods and notification periods set out in Decision D13 of the 3500 MHz Reclamation Decision. In areas where the existing licensees have given no notification of intention to convert, they will not be allowed to take any steps to offer mobile services, such as compatibility and interference testing in advance of new licensees.

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<sup>77</sup> SLPB-004-18, paragraph 44.

<sup>78</sup> For example, contrast paragraph 44 to paragraph 70 of SLPB-004-18.

122. The existing licensees in the 3500 MHz band will benefit from an immensely valuable windfall as a result of the Reclamation Decision. The foregoing measures are required to counter the built-in, time-to-market advantage that existing licensees in the 3500 MHz band clearly have.
123. It is assumed that where the existing FWA licensee has been issued a flexible use licence, the protection and notification periods do not apply. The protection and notification requirements obviously would serve no purpose where the existing FWA provider has elected to convert its FWA licences to flexible use licences.

**C. Transition in serving areas with large urban centres**

124. The purpose of the protection period and notification period provisions in the transition plan (Decision D13) is to permit existing licensees that had active fixed wireless operations as of June 8, 2018 a reasonable opportunity to transition. The Department has indicated that it intends to oversee and monitor existing licensees' transition and displacement processes. Shaw recognises the need for some flexibility, particularly in relation to areas outside of large population centres, where FWA deployments are most prevalent as of June 8, 2018.
125. However, in large urban population centres, the mandatory notification and protection periods could unjustifiably be used by incumbent licensees to delay competitive 5G deployments by new licensees. While it is encouraging that the 3500 MHz Reclamation Decision suggests that the protection/notification period can start no earlier than the date that the flexible use licences are issued for a given area or at a later timeframe of the existing licensee's choosing,<sup>79</sup> it is not clear when the notification and protection periods will begin to run. The concern that the protection and notification periods will effectively give to existing licensees a head start over new licensees may not be abated.
126. In light of these concerns, Shaw requests two clarifications, which are set out below, in relation to transition in serving areas with large urban centres:
- (a) Protection period cannot be longer than six months in urban areas from the date of issuance of flexible use licences to either an existing licensee or a new licensee.
  - (b) As soon as flexible use licences have been issued to either the existing licensee or to the competitor, the protection period for that existing licensee must begin to run.
  - (c) In the alternative, where the existing licensees cannot demonstrate continued service to subscribers that it had on June 8, 2018, the existing licensees should not be entitled to

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<sup>79</sup> SLPB-001-19, paragraphs 131, 142 and 149.

protection and notification periods. Just as existing licensees are required to transition only when its continued operations in a specific area would constrain deployment by a new licensee, new licensees should be required to notify and protect only where its new operations would constrain an existing licensee.

**D. Extension of Deployment Milestones**

127. The Consultation Document proposes that the deployment conditions, including the additional requirements applicable only to providers that have an LTE footprint, be applied to are to be imposed on a timeline that runs from the initial issuance date<sup>80</sup>, regardless of when the licensee is in fact able to utilize the licence.
128. As detailed in Section V above, the additional deployment obligations are very onerous, particularly for new competitors that already face multiple barriers in challenging the Big 3, which have a decades-long head-start. As discussed, the Department must refrain from adopting the proposed additional deployment requirements.
129. Adding to the hurdles for new competitors is the fact that under the proposal in the Consultation Document the relevant timeframe for deployment starts on the date that the licence is issued, notwithstanding that the licensee may not be able to begin its deployment efforts for some months in light of the transition process.
130. Regardless of the deployment obligations adopted in the licensing framework, where the entry of a competitive new licensee has been delayed due to the application of the notification and protection measures, the deadlines for meeting the deployment obligations should be extended to take account of the delayed implementation and in-service dates arising from the transition processes.

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<sup>80</sup> SLPB-002-19, paragraphs 170-17 and Q14. See also Annex H – Proposed Conditions of Licence, Condition H10, paragraph 27 re Service Providers Offering Mobile Services at 115.

**APPENDIX 1: RESPONSES TO SPECIFIC QUESTIONS POSED IN THE CONSULTATION DOCUMENT**

**A. Q1 – Pro-Competitive Measures**

**Q1A—ISED is seeking comments on its proposal to implement pro-competitive measures in the 3500 MHz auction.**

131. Please see Section II above. As detailed in that section, Shaw supports the Department's proposal to adopt pro-competitive measures in the 3500 MHz auction. As discussed, 3500 MHz spectrum is a critical input for 5G. Pro-competitive measures are needed in the auction to facilitate the efficient allocation of 3500 MHz spectrum resources that will drive a competitive, successful 5G environment. In particular, pro-competitive measures will help to ensure that facilities-based wireless competitors, like Shaw, are able to access sufficient mid-band spectrum resources to compete with the wireless incumbents in the 5G era, despite the incumbents' overwhelming spectrum advantage.
132. We agree with the Department's assessment that there is a risk that competition could suffer in the post auction marketplace without measures to facilitate competitors' access to spectrum. In particular, we agree with the Department's view that the incumbents, "have the means and incentive to prevent other service providers from acquiring spectrum licences in an open auction."<sup>81</sup> As substantiated by Professor Cramton, there is an incentive for the wireless incumbents, which dominate mid-band spectrum holdings, to foreclose competition in the 5G mobile market by limiting the blocks that competitors can win in the auction.<sup>82</sup> Absent the adoption of a spectrum set-aside, it is likely that competitors will be foreclosed from acquiring sufficient spectrum in the 3500 MHz auction to compete effectively in the 5G era.

**Q1B—ISED is seeking comments on the use of a set-aside, an in-band spectrum cap, or a combination of both, including the amount of spectrum that should be applied for the use of a set-aside, and/or the amount of spectrum that should be subject to an in-band spectrum cap. Provide supporting rationale for your responses.**

<sup>81</sup> SLPB-002-19, paragraph 28.

<sup>82</sup> Cramton (July 2019), pages 1 and 3.

133. Please see Sections II and III above. As detailed in those sections, Shaw proposes that the Department apply a spectrum set-aside as follows:
- (a) In all areas where at least 80 MHz of spectrum is available, the Department must adopt a 50 MHz set-aside;
  - (b) In the areas that are listed in Annex G of the Consultation Document as large population centers where less than 80 MHz of spectrum is available, the Department must adopt a 40 MHz set-aside; and,
  - (c) In the areas that are not listed in Annex G of the Consultation Document where less than 80 MHz of spectrum is available, the Department must set-aside 50% of the available spectrum.
134. The set-aside spectrum should consist of spectrum blocks that are not encumbered by existing sub-divided or grid cell licences. Only where there are insufficient unencumbered blocks should encumbered blocks be assigned to the set-aside, and in those cases, the least encumbered blocks should go toward the set-aside. This will allow wireless competitors to compete on a level playing field with licensees that already have spectrum holdings in the band.
135. In addition to the spectrum set-aside, Shaw proposes that the Department apply an in-band spectrum cap of 50 MHz in all Tier 4 service areas. Under this proposal, a licensee would not be eligible to acquire spectrum licences in services areas where the spectrum cap of 50 MHz has been met or exceeded. As detailed in Part III above, an in-band cap of 50 MHz is necessary to ensure that this spectrum does not become excessively concentrated, and to ensure that the intent and integrity of the set-aside is maintained.

**If a set-aside is to be applied:**

**Q1C—ISED is seeking comments on its proposal to limit the eligibility criteria to bid on set-aside spectrum licences to those registered with the CRTC as facilities-based providers\* that are not National Mobile Service Providers, and that are actively providing commercial telecommunication services to the general public in the relevant Tier 2 service area of interest, effective as of the date of application to participate in the 3500 MHz auction.**

**Q1D—ISED is seeking comments on its proposal that any set-aside licences acquired by set-aside-eligible bidders would not be transferable to set-aside-ineligible entities for the first five years of the licence term.**

**Q1E—ISED is seeking proposals for other eligibility criteria along with supporting rationale.**

136. Please see Section IV above. As detailed in that section, while Shaw supports the proposed criteria, Shaw is also proposing one additional criterion to ensure that access to the set-aside for wireless competitors that are positioned to compete in the commercial mobile services market, challenge the Big 3, and ensure the timely deployment of the spectrum for the provision of 5G services. Accordingly, Shaw proposes that, in addition to ISED's proposed criteria, only applicants that already provide commercial mobile wireless services should be permitted to bid on set-aside spectrum.
137. In response to Question 1D specifically, Shaw agrees with the limits on transferability of set-aside spectrum for the first five years. This preserves the integrity of the set-aside over a reasonable period of time. This would also be consistent with the Department's proposal that a cap would continue to be in place for five years following the licence issuance and that no transfer would be authorized that allows a licensee to exceed the cap during this period.

**Q1F—ISED is seeking comments on the inclusion of grid-cell and sub-divided licences towards the spectrum cap, and the proposal to allow the return of these licences in order to increase a licensee's eligibility to bid on additional spectrum within the related licence area.**

138. Shaw does not have any comments at this time.

**B. Licence Areas**

**Q2—ISED is seeking comments on its proposal to use Tier 4 service areas for the 3500 MHz licensing process.**

139. Shaw does not have any comments at this time.

**C. Amount of Spectrum Available**

**Q3A—ISED is seeking comments on its proposal to include all remaining spectrum (including partially encumbered Tier 4 areas) as part of the auction.**

**Q3B—ISED is seeking comments on its proposal to consider all spectrum acquired through the auction and only Tier 4 licences that will be issued through the transition process, simultaneously in the assignment round of the auction, in order to determine the specific frequency assignments of all licences in the 3500 MHz band.**

**Q3C—ISED is seeking comments on the proposal that licensees who acquire multiple flexible use Tier 4 licences in a given area, either as a result of the auction or as a result of the transition process, be assigned contiguous spectrum, and that this also apply to partial area licences acquired through the auction.**

**Q3D—ISED is seeking comments on the proposal to classify all partial tier licences as encumbered blocks.**

140. Shaw supports the above proposals. As we stated previously, the set-aside spectrum should consist of spectrum blocks that are not encumbered by existing sub-divided or grid cell licences. Only where there are insufficient unencumbered blocks should encumbered blocks be assigned to the set-aside, and in those cases, the least encumbered blocks should go toward the set-aside. This will aid in levelling the playing field between new competitors and the Big 3.

**Q3E—ISED is seeking comments on the proposal to bundle the remaining portions of the encumbered areas offered in the auction as a combined encumbered block of 20, 30, 40 MHz or more, depending on the number of 10 MHz blocks being bundled. [...] Comments on the proposed list of encumbered service areas where multiple blocks may be combined for the purpose of the auction are also sought.**

**If a spectrum cap is applied:**

**Q3F—ISED is seeking comments on the proposal that the bundled encumbered blocks would not count towards the spectrum cap during the auction, but that any transfers of the licences post-auction would be subject to the spectrum cap and the conditions of licence as described in section 11.2.**

141. Shaw's understanding is that these questions relate only to the proposal to bundle encumbered areas in Napanee, Estevan, Weyburn, Swift Current, Yorkton, Watrous, Lloydminster, Squamish/Whistler and Nunavut, as set out in paragraph 58 of the Consultation Document. Shaw seeks clarification on the number of blocks to be bundled in each of the service areas indicated. For example, in Squamish/Whistler it would not seem sensible to bundle a block with 92 percent unencumbered spectrum with 20 MHz that is only 4 percent unencumbered. However, a case could be made, depending on the geographic nature of the encumbrance, that bundling a single block with 92 percent unencumbered spectrum with a single block of 77 percent unencumbered spectrum is reasonable.



142. This said, Shaw has two substantive comments on bundling. First, the decision to bundle encumbered blocks into a larger than 10 MHz block within a particular service area should be made while considering the quantity of unencumbered spectrum in the area. If unencumbered spectrum is scarce in a particular service area, bundling encumbered spectrum into blocks that are too large could harm competition. Second, ISED should conduct an auction that, to the largest extent possible, ensures contiguous assignments for blocks purchased at auction. From the consultation, it is unclear to Shaw how the proposed rules could impact the contiguity of auction allocations. Therefore, at this time, Shaw requests further clarification on that point and notes that bundling should be done in a way that does not harm contiguity of auction allocations.
143. If a spectrum cap is applied, ISED should not dismiss all encumbered blocks from application toward the spectrum cap. For example, spectrum in Kamloops (4-160) is 99.96 percent clear. In Calgary (4-136), 30 MHz of spectrum is only 1 percent encumbered. ISED should establish a less strenuous test in deciding to apply spectrum toward the cap. Shaw suggests that ISED apply encumbered spectrum toward the cap if the percent of population available is at least 90 percent.

#### D. Auction Format and Rules

**Q4A—ISED is seeking comments on its proposal to use generic licences.**

**If a set-aside is applied (with or without a spectrum cap):**

**Q4B—ISED is seeking comments on its proposal to categorize all blocks won by set-aside-eligible bidders as set-aside blocks.**

**Q4C—ISED is seeking comments on its proposal to create separate categories for encumbered and unencumbered blocks, as well as open and set-aside blocks.**

**If only a spectrum cap is applied:**

**Q4D—ISED is seeking comments on its proposal to create separate categories for unencumbered and for various encumbered block in a service area.**

144. Shaw generally supports the approach to use generic licences. However, we seek clarification on ISED's proposal that "if there are significantly different levels of encumbrance for different blocks in the same service area, each encumbrance level for the service area would be offered as a separate category."<sup>83</sup> In particular, Shaw wishes to know how ISED proposes to define "significantly different levels of encumbrance" and whether there could be more than one block supplied for a given level of encumbrance in a given service area.

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<sup>83</sup> [SLPB-002-19](#), paragraph 70.

145. Shaw agrees with ISED's proposal to categorize blocks won by set-aside eligible bidders as set-aside blocks. It is consistent with ISED's successful implementation of set-asides in the prior auctions and is consistent with the intent of the set-aside.
146. Shaw also agrees with the proposal to create separate categories for encumbered and unencumbered blocks, as well as open and set-aside blocks. As we stated previously, the set-aside spectrum should consist of spectrum blocks that are not encumbered by existing sub-divided or grid cell licences. Only where there are insufficient unencumbered blocks should encumbered blocks be assigned to the set-aside, and in those cases, the least encumbered blocks should go toward the set-aside.
147. If only a spectrum cap is applied, Shaw agrees that there should be separate categories for unencumbered and encumbered blocks. However, Shaw supports having a spectrum cap in addition to a set-aside. Shaw agrees that there should be separate categories for unencumbered and for various encumbered blocks in a service area. Distinct categories for encumbered blocks created by distinct incumbents allows bidders to value different encumbered areas separately.

**Q5—ISED is seeking comments on the use anonymous bidding during the auction.**

148. Shaw is not opposed to the application of anonymous bidding during the allocation phase of the auction, so long as the quantity of aggregate demand for each product category is published at the end of each clock round of the auction, as ISED has done in prior anonymous auctions.

**Q6—ISED is seeking comments on its proposal to use a clock auction format for the 3500 MHz spectrum auction.**

149. Shaw supports the use of a uniform price clock auction format. This format is widely used, including successfully in the U.S.

**Q7—ISED is seeking comments on the proposed structure of the clock stage and on the proposed methodology for calculating processed demands and posted prices after each clock round, as described in annex C.**

150. Shaw supports the Department's proposal.

**Q8—ISED is seeking comments on the proposed range of percentage increments.**

151. Shaw agrees with ISED's proposed approach. This said, Shaw notes that successful implementation of the percentage increments has those increments typically between 5 and 10

percent. Moreover, higher increments are typically favored in the early rounds of the auction with lower increments after even the first few auction days. Finally, in determining increments, ISED must also note that it has proposed minimum bid prices that, on average, equate with the final transaction prices of similar spectrum in many recent and competitive worldwide auctions.

**Q9A—ISED is seeking comments on the proposed structure of the assignment stage, including the order of the assignment rounds, treatment of existing holdings, the combination of service areas into a single assignment area and parallel bidding.**

**Q9B—ISED is seeking comments on the proposal to apply bidder optimal core prices and to use the “nearest Vickrey” approach in determining the assignment prices.**

152. Shaw generally agrees with ISED’s proposed approach. However, Shaw disagrees with a policy of presenting bidders with bid options that do not represent feasible assignments, as ISED followed in its 600 MHz auction. Even though a similar policy is occasionally followed by other regulators (most notably the U.S.) in an extra attempt to withhold information that could potentially be used to make inferences about the winnings of other bidders, the drawbacks of this policy outweigh its benefits. The presentation of fake bid options can prevent a budget-constrained bidder from expressing its true preferences for the real bid options. In Shaw’s view, this efficiency loss is not justified by the risk that bidders could use real bid option information to a strategic advantage. Furthermore, it is fundamentally misleading to present bidders with bid options that are not possible to win under any circumstances.
153. Shaw endorses using the “nearest Vickrey” approach in determining assignment prices. This method was successfully used in the recent 600 MHz auction.

#### **E. Bidder Participation and Auction Rules**

**Q10—ISED is seeking comments on the proposed affiliated and associated entities rules that would apply to bidders in the 3500 MHz auction.**

**Q11—ISED is seeking comments on the proposed rules prohibiting collusion and other communication rules, which would apply to bidders in the upcoming 3500 MHz auction.**

154. Bidder participation rules are intended to limit gaming and any form of direct or indirect collusion between potential bidders or competitors and to ensure the integrity of the auction. The content and enforcement of such rules are particularly important in spectrum auctions that are subject to pro-competitive measures (such as set-asides or caps) designed to limit the power of incumbent licensees to foreclose market entry by strong competitors or to otherwise influence auction outcomes.

155. ISED has proposed some tightening of the affiliation, association, and collusion and prohibited communication rules in the Consultation Document. Notably, the Department proposes to:
- (a) Over and above the disclosure of names and narrative descriptions of all affiliated and associated entities,<sup>84</sup> all applicants must disclose in their applications to participate in the auction:
    - (i) Arrangements with any other potential bidder that relate in any way to the future use of the licences being auctioned directly or indirectly;<sup>85</sup>
    - (ii) Arrangements to establish a joint network using the spectrum licences acquired by each of the entities;<sup>86</sup>
    - (iii) Arrangements regarding a joint backhaul network if they relate to the licences being auctioned;<sup>87</sup> and
    - (iv) Arrangements for significant joint equipment purchases.<sup>88</sup>
  - (b) Associated entities that wish to participate in the 3500 MHz spectrum auction as separate bidders must submit their applications for permission to do so to the Department at least two weeks in advance of the final application deadline.<sup>89</sup> Should the request be denied, the associated entities would be required to select which entity will apply to participate in the auction.<sup>90</sup>
  - (c) Whereas in previous auctions,<sup>91</sup> discussions concerning new arrangements or the expansion of existing sharing arrangements that relate to spectrum outside of licences being offered were expressly exempt from the requirement that these be disclosed to the Department, SLPB-002-19 contains no such exemption.<sup>92</sup>

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<sup>84</sup> SLPB-002-19, paragraph 128.

<sup>85</sup> SLPB-002-19. Emphasis added.

<sup>86</sup> SLPB-002-19, paragraph 129.

<sup>87</sup> SLPB-002-19, paragraph 129.

<sup>88</sup> SLPB-002-19, paragraph 129.

<sup>89</sup> SLPB-002-19, paragraph 120: Previously, applicants were encouraged to approach ISED to seek non-binding guidance or predeterminations at least two weeks prior to the application deadline. See, for example, SLPB-002-18 (600 MHz Licensing Framework), paragraph 245. In the 3500 MHz process, it is proposed that associated entities be required to apply at least two weeks ahead of all other applicants.

<sup>90</sup> SLPB-002-19, paragraph 120.

<sup>91</sup> SLPB-002-18, paragraph 154.

<sup>92</sup> SLPB-002-19, paragraph 129.

156. Shaw does not oppose the above clarifications. However, it remains unclear as to whether the auction rules are complete in ensuring the integrity of the set-aside. Specifically, Shaw is concerned about the possibility of an incumbent using set-aside eligible entities as vehicles to gain access to set-aside spectrum and influence the outcome of the auction by preventing Shaw and other strong new competitors from gaining access to this spectrum.
157. Although there are legitimate arrangements between incumbents and set-aside eligible bidders, including joint network and sharing agreements, concerns may arise depending on the character of the arrangements and the parties' intentions. In particular, where the set-aside-eligible bidder has no existing network, proven track record in the wireless industry or commitment to investment, the power and influence in such an arrangement between a Big 3 incumbent and a set-aside-eligible bidder lies with the incumbent. The relationship between such a bidder with no proven track record and a national incumbent is characterized by a stark imbalance of network and assets, know-how, and capacity to deploy.
158. There are many reasons why a national incumbent may seek to use a weaker set-aside-eligible entity as a vehicle to gain access to set-aside spectrum. They would be incented to enter into arrangements with these bidders because in a major spectrum auction, such an arrangement would enable it to potentially keep valuable spectrum out of the hands of strong and established non-national incumbent applicants, thereby dictating or significantly influencing who gets access to spectrum and in which locations. The national incumbent could effectively "pick the winner" and would be very strongly incented to choose an entity that would be less threatening from a competitive perspective or one that could be influenced by the incumbent for its benefit.
159. There are also avenues through which a national incumbent could seek to do so. For example, they could establish a funding arrangement with the set-aside-eligible bidder. Such transactions would clearly fall outside of the ordinary course of business for a national incumbent, creating a compelling inference that the objectives of the arrangement extend beyond their explicit features.
160. An arrangement between an incumbent and a set-aside eligible bidder, including one whereby an incumbent finances, guarantees or otherwise backstops a set-aside eligible bidder's participation in the auction could violate the spirit and intent of the auction framework and undermine the integrity of the set-aside. Such an arrangement will empower an incumbent to do exactly what the set-aside was designed to prevent: it would foreclose strong new, independent competitors like Shaw from accessing the spectrum it needs to compete with the Big 3, by effectively forcing us to bid against an incumbent for spectrum (against whom we have no reasonable prospect of winning).

161. Accordingly, the Department should review arrangements to distinguish between legitimate commercial arrangements and arrangements where the Big 3 have undue influence. This will protect the integrity of the auction and promote the Government's goal of empowering Canadians through a more competitive wireless market.
162. To facilitate this, the Department must require prospective bidders to disclose any such arrangements or possible arrangements for review. Determining whether a national incumbent is using a set-aside-eligible entity as a vehicle to gain access to set-aside spectrum must be considered as part of the Department's fact-based, case-by-case assessment of applications to participate in the auction. As part of this assessment, the Department must consider whether the national incumbent is exercising undue influence on the set-aside-eligible entity to circumvent the set-aside. The key factor the Department could also consider, among other things, is whether the national incumbent has an arrangement with a bidder that has no existing wireless business, limited or no mobile infrastructure, and is not currently competing against the national incumbent in the wireless market. The Department should also ensure that it requires sufficient documentation to be included as part of the application process to participate in the auction, including financing or other funding arrangements between incumbents and prospective set-aside eligible bidders.
163. The Department has recognised the likelihood that the national incumbents have the means and incentive to prevent other service providers from acquiring spectrum licences in an open auction. It has also recognised the benefits that new service providers like Freedom have brought to the market in the form of lower prices, customer responsiveness and disruptive rivalry. In light of these factors, it is considering implementing one or more pro-competitive measures in the upcoming auction. It makes little sense, then, that the auction rules permit the national incumbents to do indirectly what they are not allowed to do directly.

#### F. Conditions of Licence

**Q12—ISED is seeking comments on its proposal to issue new flexible use spectrum licences in the 3500 MHz band with a 20-year licence term and the proposed wording of the condition of licence above. Licence terms for all flexible use licences, regardless of when they are converted from fixed to flexible use, will terminate on the same date as licences issued through the auction process.**

164. Shaw has no comments at this time.

**Q13—ISED is seeking comments on the proposals on the condition of licence related to transferability and divisibility, and the proposed wording above.**

165. Shaw has no comments at this time.

**Q14—ISED is seeking comments on the proposed deployment condition of licence as stated above as well as on the proposed levels of deployment.**

166. Please see Part V above. As detailed in that section, Shaw objects to additional deployment requirements that apply only to those that have invested billions in delivering LTE services. This includes requirements for: (i) 90% coverage of their mobile LTE footprint as of June 5, 2019 within 5 years; (ii) 97% coverage of their mobile LTE footprint as of June 5, 2019 within 7 years; and, (iii) in areas with at least one large population center as set out in Annex G, 95% coverage of the population outside the large population center within 10 years. These additional requirements are impractical, inequitable and will detract from Department's stated objectives.

167. As also stated previously, where the entry of a competitive new licensee has been delayed due to the application of the notification and protection measures, the deadlines for meeting the deployment obligations should be extended to take account of the delayed implementation and in-service dates arising from the transition processes

**Q15—ISED is seeking comments on the proposed conditions of licence outlined in annex H that would apply to flexible use licences.**

**Q16A—ISED is seeking comments on its proposal to amend all FWA conditions of licence based on the proposed conditions of licence in annex I.**

**Q16B—ISED is seeking comments on its proposal to apply this amendment on June 5, 2019, plus one year—June 5, 2020.**

168. As we have stated in response to other recent consultations initiated by the Department, Shaw generally does not support the Research and Development ("R&D") condition for mobile spectrum licences, which provides that entities with revenues over \$1 billion in annual gross operating revenues from wireless services in Canada, averaged over the term of the licence, are required to invest 2% of adjusted gross revenues from the use of the licence toward eligible R&D activities related to telecommunications. Shaw is very supportive of innovation and investment in advanced telecommunications networks. However, Shaw submits that the inclusion of this condition of licence has the potential to take away from innovation and investment. The challenges that arise with meeting the technical eligibility requirements associated with the R&D condition are significant. The condition represents a potential barrier to providers' pursuit of innovation through the right partnerships, its ability to continue to invest intensely in a leading-edge converged network, and its ability to provide a high-quality and valuable alternative in the mobile wireless market. Shaw believes that this requirement distorts the marketplace and the investment decisions of licensees,

which should be driven by the connectivity needs and wants of Canadian consumers and businesses, including the need for more affordable services.

169. We also note that there is a disproportionately large administrative burden associated with gathering, auditing and generating R&D reports. In the interest of promoting connectivity, competition and investment in leading-edge telecommunications networks, Shaw would suggest removing the proposed Research & Development condition in Annex H of the Consultation Document and all other mobile wireless spectrum licences.

#### **G. Auction Process**

**Q17— ISED is seeking comments on the proposed opening bids as presented in annex D.**

170. Please see Section VII above.

**Q18—ISED is seeking comments on the proposed eligibility points for spectrum licences in the 3500 MHz as outlined in annex D, and pre-auction deposits as outlined above.**

171. Although ISED has correctly determined that licences covering the most populated areas should have more eligibility points per person than smaller markets, the eligibility point structure that ISED has proposed is too dramatically weighted toward just three licence areas. Specifically, one block of spectrum nationwide (under ISED's proposal) equates to 9,325 eligibility points. The top three licence areas—Toronto, Montreal, and Vancouver—comprise a full 70.2 percent of these eligibility points. By contrast, only 40.1 percent of the population is covered by these three licence areas.
172. The consequence of this eligibility point structure is that even if ISED implements a high initial activity rule (between 90 and 95 percent, for example), bidders will have an incentive to park insincere demand in the top markets for the added flexibility it affords. This will likely result in a highly sequential auction, harming price discovery and efficiency.
173. To reduce the degree of sequential bidding, Shaw proposes that ISED smooth eligibility points by population within the 18 most populated markets (the first decile of market areas). ISED's proposal allocates 8,190 eligibility points to the 18 most populated markets. That is, in markets that comprise a total of 69.3 percent of the population of Canada, ISED is assigning 87.8 percent of the eligibility points, which is entirely appropriate. Therefore, Shaw suggests that ISED simply smooth these 8,190 bid points based on population within the 18 most populated markets. The resulting eligibility point structure would be as follows:



Area Rank	Name	ISED Bid Points	Proposed Points
1	Toronto	3,260	2,370
2	Montréal	2,020	1,470
3	Vancouver	1,270	920
4	Ottawa/Outaouais	290	490
5	Calgary	280	480
6	Edmonton	270	450
7	Québec	120	310
8	Winnipeg	110	280
9	Guelph/Kitchener	90	240
10	London/Woodstock/St.Thomas	90	230
11	Victoria	60	160
12	Halifax	60	150
13	Windsor/Leamington	50	140
14	Kelowna	50	130
15	Barrie	50	120
16	Niagara-St.Catharines	50	110
17	Saskatoon	40	90
18	Trois-Rivières	30	50

174. Again, the sum total of eligibility points is identical to ISED’s suggested structure. Therefore, under this eligibility point structure, ISED could keep the eligibility point distribution exactly the same as its proposal for markets outside of the top 18. But because the structure is distributed according to population in the top 18 markets, the weight on the top three markets is not as severe. Shaw believes revising the eligibility point structure in this way will result in improved incentives for sincere bidding, which will reduce the degree of sequential bidding, thereby benefiting price discovery and overall efficiency.

**Q19—ISED is seeking comments on the proposed renewal process for spectrum licences in the 3500 MHz band.**

175. Shaw has no comments on the proposed renewal process at this time.

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