

Reply Comments of Shaw Communications Inc.

Consultation on a New Set of Service Areas for Spectrum Licensing

***Canada Gazette*, Part I, November 27, 2018, Notice No. DGSO-002-18, as amended**

March 21, 2019

I. INTRODUCTION

1. The following constitute the reply comments of Shaw Communications Inc. (“Shaw”) to Innovation, Science and Economic Development Canada (“ISED” or the “Department”) in connection with the proceeding (the “Consultation”) initiated by *Consultation on a New Set of Service Areas for Spectrum Licensing*, Notice No. DGSO-002-18 (the “Consultation Document”), as amended by Notice No. DGSO-003-18.
2. As explained in our initial comments, Shaw is generally supportive of the goals and policy objectives that motivate and guide the Department in the present Consultation.¹ However, we question the need to establish a new set of nationwide service tiers to achieve them. In fact, the development and use of an overly prescriptive licensing tool at this time could actually diminish efficient spectrum usage and hinder Canada’s ability to meet future wireless needs, especially if the Department’s proposals are not carefully examined and adjusted.
3. Other parties share these reservations.² Québecor has opposed the Department’s proposal to create Tier 5 licence areas, echoing Shaw’s concerns.³ It has further noted that the Department recently established stricter deployment requirements in order to promote rural deployment by licensees, and that such measures should be given time to take effect.⁴ Bell has stated that the “creation of Tier 5 service areas will lead to significant interference challenges, inefficient deployment, and an unnecessarily complex auction process.”⁵ Other parties have observed the negative impact that the

¹ The Department’s intention for the present Consultation is to complement ISED’s existing suite of spectrum licensing mechanisms with new service areas that will (a) help ensure that Canada is well prepared to meet current and future wireless needs, (b) encourage additional access to spectrum within rural areas, and (c) support new technologies and emerging use cases. (Consultation Document at paragraph 12.)

It has also identified the following policy objectives for a new set of service areas: (a) To improve access to spectrum, furthering more efficient usage across Canada; (b) To address the unique geographic distribution of Canada’s population, allowing for greater flexibility in the design of licensing frameworks; and (c) To better address new and different services, technologies, applications and use cases. (Consultation Document at paragraph 26.)

² See initial comments of Québecor Média inc. (“Québecor”), Bell Mobility Inc. (“Bell”), Telus Communications Inc. (“Telus”), and Rogers Communications Canada Inc (“Rogers”) in the Consultation.

³ Initial comments of Québecor in the Consultation at paragraph 2.

⁴ *Ibid.* See also initial comments of Telus in the Consultation at paragraph 3: “[T]he potential introduction of new Tier 5 service areas does not have to be the first recourse for increasing the availability of rural spectrum. Deployment requirements and other regulatory tools can be used to encourage any fallow spectrum getting put to use.”

⁵ Initial comments of Bell in the Consultation at paragraph 2.

use of Tier 5 licensing could have on 5G deployment.⁶ Even Xplornet, a rural broadband provider and advocate for the creation of Tier 5 licence areas has cautioned against overcomplicating matters with the creation of a set of new nationwide tiers:

Xplornet does not believe that the issues associated with tier 4 licensing areas are present with respect to small population centres. As a result, the additional complexities associated with creating separate licensing areas for small population centres are not warranted.⁷

4. Thus, there is a chorus of interveners opposing or questioning the prudence of developing nationwide Tier 5 licensing areas at this time. However, what is even more striking about the record of this proceeding is the absence of consensus on several fundamental issues in this Consultation, including the appropriate design principles and best option for Tier 5 licensing, and widely divergent alternative proposals for creating smaller licence tiers submitted by various parties.
5. In Shaw's view, this lack of consensus highlights the complexity of the task the Department is attempting to undertake and should prompt ISED to reconsider the necessity to develop Tier 5 licence areas at this time. The Department should consider adopting a more flexible policy approach to addressing its stated objectives that can better account for the rapid pace of technological change and the high-degree of variability in the different spectrum bands. Shaw urges the Department to consider the tools already available to it, such as deployment requirements and ad hoc Tier 4 subdivisions, which would enable the implementation of more granular licence areas on a case-by-case basis. At a minimum, the Department must avoid an overly formulaic and generalized approach to small tier licensing and develop and use smaller tier areas only where a specific need exists. At a minimum, the economic and geographic diversity of Canada necessitates a customized approach to smaller tier licensing, as has also been recognized by many other parties.⁸

⁶ See, e.g., initial comments of Québecor in the Consultation at paragraph 2; initial comments of Rogers in the Consultation at paragraph E4.

⁷ Initial comments of Xplornet Communications Inc. ("Xplornet") in the Consultation at paragraph 5.

⁸ For instance, in its initial comments in the Consultation, Rural Municipalities of Alberta highlighted that the concept of "commercial viability" will vary across Canada.

See also initial comments of TekSavvy in the Consultation at paragraph 25: "The creation of a coherent and consistent set of Tier 5 service areas across the country is unlikely if ISED only applies a simple methodology involving one type of administrative subdivision."

6. In these reply comments, we highlight additional areas of agreement with Shaw's initial submissions, address certain matters of disagreement, and consider novel proposals of other parties. Out of necessity, Shaw has responded to some, but not all of the issues raised by other interveners in their initial comments. Shaw's failure to address any submission, particularly where it is contrary to Shaw's interests, should not be interpreted as our acceptance of such submission.

II. USE OF TIER 5 LICENCE AREAS

7. If smaller tier sizes are established, the Department must use them judiciously. In general, they should not be used for mobile or flexible use licensing, given the importance of geographic contiguity for the delivery of mobile wireless services. As Rogers has submitted, contiguity will become even more important with the expansion of Internet of Things networks:

[I]t is critical the Department also recognize the importance of geographic contiguity of spectrum for national facilities-based networks for current and advanced communication services like 5G, especially for national Internet of Things networks and along transportation corridors. Any future licensing of spectrum on a potential Tier 5 basis should not sacrifice Canadians' ability to connect to robust, nation-wide or other wide-area networks.⁹

8. This concern applies equally to regional facilities-based networks, which will play a critical role in fuelling the development and expansion of high-quality 5G and Internet of Things networks in Canada.
9. Where the Department determines that exceptional circumstances necessitate the licensing of mobile or flexible use spectrum on Tier 5 basis, it is imperative that only a

British Columbia Broadband Association, the Canadian Association of Wireless ISPs, the Canadian Communication Systems Alliance, the Independent Telecommunications Providers Association, Cogeco Communications Inc., ECOTEL Inc., Sogetel Mobilite Inc. and SSi Micro Ltd. (collectively, "BCBA et al.") emphasize that the Tier 5 boundaries must serve the needs of local communities: "If the mechanical application of design principles and rules leads to results which do not best serve the affected communities, the new service areas will not achieve the desired objectives for those communities. ... Those boundaries need to be adjusted so that the service areas are suited to the needs of the communities and operators, and support ISED's objectives:

- Boundaries that bisect population centres or other communities of interest;
- Boundaries that ignore local topography; and
- Boundaries that separate existing transmission sites from the communities they serve."

(See initial comments of BCBA et al. in the initial consultation at paragraphs 37 through 39.)

⁹ Initial comments of Rogers in the Consultation at paragraph E4. Telus (initial comments, paragraph 7), Bell (initial comments, paragraph 31) and Xplornet (initial comments, page 8) also emphasize the importance of network contiguity.

limited portion of the spectrum band (e.g., one block or one paired block) should be allocated in this manner. We note that Bell makes the same recommendation.¹⁰

10. Furthermore, Tier 5 use should be restricted to spectrum bands whose propagation characteristics make them suitable for small licensing areas. Shaw concurs with Rogers and CCI Wireless that based on the current technological ecosystem, Tier 5 licence areas are only appropriate for high-band spectrum.¹¹ This issue highlights the problem with establishing Tier 5 service areas as a stimulus for rural deployment at the present time: although the Department *expects* technological developments will enhance the suitability of more granular licence areas for mid- and perhaps even low-band spectrum, the technology simply does not exist yet. As others have observed, “Where ISED lands on the definition of a Tier 5 licence [area] would dictate whether a band would be suitable for Tier 5 licensing.”¹² In Shaw’s view, this fact strongly militates in favour of considering other policy tools for the achievement of the Department’s stated policy objectives.¹³ Otherwise ISED must adopt a cautious approach to boundary design that is based on the current propagation characteristics of the lowest-frequency spectrum band for which Tier 5 use is foreseen.

III. DESIGN OF TIER 5 SERVICE AREAS

11. Should the Department nevertheless choose to proceed in this Consultation to establish Tier 5 licence areas, Shaw urges the Department to consider the alternative proposal and additional design principles submitted by Shaw in its February submission. As a new competitor committed to bringing sustainable choice, value and innovation in the mobile wireless market to Canadians across the country, we sought to propose a design method that would promote the Department’s goals while minimizing the negative impact

¹⁰ See initial comments of Bell in the Consultation at paragraph 6: “If the Department chooses to allocate spectrum using Tier 5 service areas, it is imperative that they only do so for a limited portion of the spectrum band. The remaining spectrum should be auctioned using larger service areas (i.e., Tier 2 and Tier 3).”

¹¹ Initial comments of Corridor Communications Inc., operating as CCI Wireless, at pages 1 to 2; initial comments of Rogers in the Consultation at paragraph E3.

¹² Initial comments of Telus in the Consultation at paragraph 30.

¹³ For example, as discussed in our initial comments, licence subdivisions would allow the Department to licence specific spectrum blocks on a more granular basis if the circumstances present at the time of a future licensing proceeding dictate it. We note that this is the converse of BCBA et al.’s suggestion that the Department could “choose on case-by-case basis to combine smaller service areas into larger areas for a specific auction process where it might make sense for a given spectrum band, without necessarily being limited to using existing higher Tier service areas” (initial comments of BCBA et al. in the Consultation at paragraph 31) but avoids the herculean effort associated with establishing nationwide customized Tier 5 service areas that would necessarily be examined further before clustering in such subsequent proceeding.

on the deployment of competitive mobile wireless networks. Although the record comprises numerous divergent proposals for the appropriate design principles that should be applied and approach taken to drawing Tier 5 boundary lines, there are certain areas of fundamental agreement between Shaw's proposals and those of other parties.

12. Rogers proposes several additional design principles which, like Shaw's, will help to minimize harmful interference and enable co-existence to the greatest extent possible. Rogers recommends that the Department
- Establish geographic separation (minimum 30 kilometres) between population centres;
 - Amalgamate adjacent population centres;
 - Consider future development and population expansion (i.e., sprawl);
 - Consider bodies of water (i.e., areas that share a water border should be aggregated together into a single Tier 5, within reason);
 - Consider terrain: population centres with high or mountainous terrain should be taken into account when placing tier boundaries. Combining them into a common Tier 5 service area, within reason, will help mitigate the risk of interference under favourable propagation conditions.¹⁴
13. Shaw agrees that these are important considerations that must be taken into account by the Department in Tier 5 boundary design. Implicit in Rogers and Shaw's additional design principles is a recognition that service areas must be adapted to the physical reality of their environment. Topography, for example, is a major consideration. British Columbia Broadband Association, the Canadian Association of Wireless ISPs, the Canadian Communication Systems Alliance, the Independent Telecommunications Providers Association, Cogeco Communications Inc., ECOTEL Inc., Sogetel Mobilite Inc. and SSi Micro Ltd. (collectively, "BCBA et al.") have also made this recommendation.¹⁵

¹⁴ Initial comments of Rogers in the Consultation at paragraph 41.

¹⁵ Initial comments of BCBA et al. in the Consultation at paragraph 28.

14. As noted above, geographic contiguity is fundamental to mobile network deployment. As such, several parties recognize the need to preserve network contiguity to the greatest extent possible in the design of Tier 5 boundaries. For instance, Xplornet recommends that fostering the deployment of contiguous networks should be adopted by the Department as an additional design principle, submitting as follows:
- [I]n designing a new set of tier 5 licence areas, ISED should be careful not to introduce an unnecessary level of granularity into spectrum licensing. Unnecessary divisions of tier 4 licence areas will harm the efficient and effective deployment of spectrum resources by impacting the contiguous deployment of frequencies by carriers.¹⁶
15. For the same reason, Bell emphasizes that the Department must ensure that Tier 5 service areas do not nest within each other to preserve network contiguity. Similarly, numerous parties, like Shaw and Rogers, have urged the Department to combine adjacent urban census subdivisions or population centres in single service areas.¹⁷
16. Several parties agree with Shaw that the Department should establish a minimum size for Tier 5 service areas.¹⁸ Telus rightly cautions that the introduction of Tier 5 service areas that are too small will increase auction complexity, restrict frequency and geographic contiguity, and create significant additional complexity to coordination and coexistence efforts.¹⁹ TekSavvy raises similar concerns.²⁰ As Shaw noted in its initial comments, the net effect of these challenges will be to make it impractical to deploy the spectrum for mobile use. However, it is difficult to establish a minimum service area size before knowing the spectrum band for which it will be used. As Telus has noted, “the minimum size of service area should be one that supports the deployment of a cluster of base sites which is the fundamental purpose of area-based licensing.”²¹ For this reason, an optimal approach to establishing minimum service area size would be based on a specific spectrum band and service allocation, due to propagation variability.
17. There are a few design proposals, however, that the Department should carefully scrutinize or reject. First, consistent with its belief that the issues associated with Tier 4

¹⁶ Initial comments of Xplornet in the Consultation at paragraph 29.

¹⁷ See, e.g., initial comments Telus at paragraphs 6, 29.

¹⁸ See, e.g., initial comments of Telus at paragraph 20; initial comments of Rogers at paragraph 63; initial comments of TekSavvy Solutions Inc. (“TekSavvy”) in the Consultation at paragraph 29.

¹⁹ Initial comments of Telus in the Consultation at paragraph 21.

²⁰ Initial comments of TekSavvy in the Consultation at paragraph 29.

²¹ Initial comments of Telus in the consultation at paragraph 30.

licensing areas are not present with respect to small population centres, Xplornet recommends that separate Tier 5 licensing areas should only be created for large population centres (populations of over 100,000 people) and medium population centres (populations of 30,000 to 99,999).²² It therefore recommends that Tier 5 boundaries be drawn as tightly to urban centres as interference management will allow, creating a distinct Tier 5 area for urban-adjacent, low-density populations.²³

18. Shaw agrees that the Department should avoid the complexities associated with creating separate Tier 5 service areas within existing Tier 4 service areas where there is no compelling need to do so, and it may be the case that more granularity is only needed in certain Tier 4 service areas in which low-density regions abut medium and high population centres (although we note that Xplornet offers no evidence for this proposition). However, we take issue with Xplornet's recommendation that Tier 5 boundaries be drawn as tightly as possible to urban centres, because it ignores the reality of mobile network deployment. As explained in our initial comments, and echoed by other mobile operators, a reasonable buffer zone must be implemented around population centres to align with typical subscriber mobility patterns, ensure service continuity, and accommodate urban expansion. Such buffer zone should include relevant commercial economic and cultural areas (even if they are not populated) that are logically and economically associated with population centers. The overarching rationale for buffer zones is ensuring long-term service quality, which is in the interest of every urban licensee. Therefore, there should be no concern about buffer zones being underserved.
19. Second, we note that a number of smaller connectivity providers have argued for Tier 5 designs that would enhance their access to spectrum in urban areas. For instance, TekSavvy has proposed that large population centres be divided into several service areas to increase affordability for smaller stakeholders. TekSavvy submits that Tier 5 service areas should be based on populations of between 200,000 and 300,000 people. BCBA et al similarly propose that for large population centres (500,000+) the Department hive off any segment beyond the Census Division that has at least 15,000 people residing within it. Shaw opposes these proposals. The division of populated

²² Initial comments of Xplornet in the Consultation at paragraph 5.

²³ *Ibid.* at paragraph 26.

areas would directly undermine the principle of network contiguity, impair service coverage, dramatically increase interference, and ultimately result in less efficient spectrum usage, contrary to the Department's policy objective for this proceeding.

20. TekSavvy and BCBA et al. have also raised several other measures that they stipulate must accompany the creation of Tier 5 licensing areas to promote spectrum access by smaller entities.²⁴ These items are out of scope for this proceeding and should be considered in the context of separate licensing proceedings.

21. While Shaw has been a strong and vocal advocate for appropriately designed pro-competitive licensing measures, we respectfully submit that this is the wrong consultation in which to debate such issues. It is clear from the Notice of Consultation that the present consultation is about improving access to spectrum in rural areas, not about competition in urban areas.²⁵

IV. CONCLUSION

22. Given the evident lack of consensus on the record of this proceeding, Shaw urges the Department to reconsider the need to develop Tier 5 licence areas at the present time and look instead at how it might leverage existing policy tools to increase the availability of rural spectrum. If it nevertheless proceeds with the development of Tier 5 areas, we strongly recommend that the Department adopt and apply the design principles described by Shaw in its initial comments. Our proposals have been carefully crafted to facilitate the development of smaller licence areas in a manner that minimizes the impact on mobile wireless deployment. Shaw appreciates the opportunity to provide comments in this important consultation.

²⁴ Initial comments of BCBA et al. in the Consultation at pages 52 through 57; initial comments of TekSavvy in the consultation at paragraphs 66 through 70.

²⁵ See, for example, paragraphs 11 and 12 of the Notice of Consultation.