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TekSavvy Solutions Inc

800 Richmond Street
Chatham ON N2M 5J5

TELEPHONE +1 519 360-1575 **FAX** 519.360.1716
TOLL FREE 877-779-1575 **teksavvy.com**

Andy Kaplan-Myrth

Legal & Regulatory

Direct Line +1 819-484-1205 akaplanmyrth@teksavvy.ca

Innovation, Science and Economic Development Canada
c/o Eric Parsons,
Senior Director, Spectrum Operations
235 Queen Street, 6th Floor
Ottawa, Ontario K1A 0H5

March 21, 2019

RE: Reply comments for Consultation on a New Set of Service Areas for Spectrum Licensing (DGSO-002-18)

Dear Mr. Parsons:

Teksavvy Solutions Inc (TSI) is pleased to submit our reply comments in response to ISED's Consultation on a New Set of Service Areas for Spectrum Licensing.

Having reviewed the filings of other parties, we are convinced that TSI's input can contribute to ISED's ongoing efforts to ensure adequate and affordable spectrum is made available to the full range of service providers in rural and remote areas so that all Canadians have access to innovative, affordable broadband services from a diversity of service providers.

A. General Observations & Commenters' Views on Design Principles

1. There was a broad consensus that a new Set of Service Areas for Spectrum Licensing – defined as Tier-5 – is needed to allow the Department to continue to meet its policy objectives. TSI notes that only Bell, Québecor and Shaw opposed the idea.
2. TSI believes that the views of Québecor and Shaw to the effect that Tier-5 service areas are not needed or are premature, ignores the blatant evidence that network and service deployment lags in rural areas. The 2018 CRTC Communication Monitoring Report stated that 26% of rural households rely solely on fixed wireless access service and do not have access to Cable, DSL or Fibre wireline service.¹
3. TSI notes there was a general consensus that the proposed design principles were reasonable, although some commenters proposed changes to some principles and many commenters proposed additional design principles to address shortcomings.
4. There was little consensus among commenters, however, regarding their various proposed additional design principles.

¹ 2018 CRTC Communications Monitoring Report p.138, <<https://crtc.gc.ca/eng/publications/reports/policymonitoring/2018/cmr1.htm>>.

B. Commenters' Views on ISED's Options

5. Opinions were also clearly divided on which one of ISED's two Options was preferred. Few commenters found either Option suitable as is: most considered that neither Option was completely suitable and virtually all proposed changes to either Option 1 or Option 2 or both. Almost twice as many who expressed an opinion chose Option 1 over Option 2 as the better starting point for the design of Tier-5 service areas.
6. Some supporters of Option 1 highlighted the fact that it contained well-defined boundaries (SaskTel) or that it sufficiently separated urban from rural areas (EORN), or that it prevented cherry-picking of dense urban areas (CCi).
7. Some who supported Option 2 expressed concern that the use of census subdivisions (CSDs) in Option 1 would perpetuate a key issue with the current Tier-4 areas, namely that they combine urban and rural areas and would perpetuate the incentives to deploy in urban areas only under current Deployment requirements (Xplornet).
8. Many opponents to Option 1 sided against it in part because of concerns about the small size of many Census Sub Divisions (CSD) and because an excessive fragmentation of the Canadian territory would result from its use (Rogers, Telus, Québecor).
9. Even some of those who supported Option 1 expressed concerns about the small sizes of CSD in certain areas (Bell, SaskTel) or that the service area boundaries thus created would divide communities (Bell).
10. Conversely, others were concerned that Option 2 would result in a set of service areas which would be too large (Telus, EORN) and unaffordable (EORN); which, in effect, would be much like the existing Tier-4 (Bell).
11. Taken as a whole, however, the commenters made clear that neither of ISED's Options would be suitable as currently formulated and that, both Options deviated - at least partially, from ISED's own design principles.
12. Commenters expressed overlapping concerns that ISED avoid creating service areas that are too large, too small or too numerous and avoid having communities divided by service area boundaries. They stated that ISED should create service areas which make sense for communities and service providers and which respect local conditions, in order to be of service to Canadians consumers.
13. However, the commenters proposed solutions generally did not address the shortcomings of their preferred solution or introduced new issues which typically were expressed in qualitative terms and thus accompanied by significant ambiguity. Examples include: Québecor's ill-defined "communities of interest"; Shaw's "areas of interest" and its proposal that ISED would create tier 5 areas only "where necessary" without defining what would make it necessary; and, Telus's minimum size of service areas defined as a "cluster of base stations". All these proposals would introduce a level of subjectivity that would be in contradiction with ISED's third design principle of "Maintaining technological and competitive neutrality."

C. TSI's Approach

14. TSI's submission shared the same general concerns expressed by many commentators and provided specific measures to address them. We noted a high degree of consistency between the principles behind the proposals made by (BCBA, Canwisp, CCSA, ITPA, Cogeco, ECOTEL, Sogetel and SSI) and those contained in TSI's Proposal.
15. In developing TSI's methodology for the design of Tier 5 service areas, we were guided by six high-level principles:
 - I. Establish a distinction between rural and remote services areas based on population density, or size of CCS or CSDs. TSI maintains that both approaches would generate similar results and notes that ISED would benefit from increased flexibility in the design of future licensing frameworks.
 - We note that (BCBA, Canwisp, CCSA, ITPA, Cogeco, ECOTEL, Sogetel and SSI) recognized the distinction between rural and remote areas and applied a similar methodology to their joint proposal.
 - II. Fix anomalies with existing Tiers of service areas or allow minor deviations to the nesting principle for the new set of service areas, in order to avoid the situation wherein population centers are divided by undesirable or unnecessary boundaries.
 - BCBA, Canwisp, CCSA, ITPA, Cogeco, ECOTEL, Sogetel and SSI submitted that Tier 5 service areas should generally nest within existing Tier 4 service areas; however, in those cases where Tier 4 service area boundaries bisect a population center, these commentators underlined the importance of preserving the territorial integrity of the population center and the precedence of this integrity over strict application of the "nesting" rule.
 - Bell also expressed concern about population centers crossing Tier-4 boundaries. In other words, existing service area boundaries are already dividing communities. TSI submits that this is an issue that ISED must already address – irrespectively of its decision on Tier-5 service areas and can do so as part of this process of defining Tier-5s.
 - Others also share concerns about dividing communities: Rogers commented about CSD boundaries dividing some population centers. TSI's Proposal addresses this concern by separating population centers into their own Tier-5s. However, we maintain that population centers divided by Tier-4 boundaries should also be addressed.
 - III. Use population centers to distinguish rural from urban Tier 5s. TSI submits that a minimum population threshold of 10,000 inhabitants should be used for non-remote areas. In remote areas, the minimum population threshold to carve out a population center should be set based on input from stakeholders operating in those areas.
 - Again, BCBA, Canwisp, CCSA, ITPA, Cogeco, ECOTEL, Sogetel and SSI submitted that population centers should be separated into their own Tier

5 service areas using Census Population Centers boundaries, as this provides the best distinction between urban and rural areas.

- Telus and Xplornet agreed with BCBA, Canwisp, CCSA, ITPA, Cogeco, ECOTEL, Sogetel and SSI in their submissions.
- BCBA, Canwisp, CCSA, ITPA, Cogeco, ECOTEL, Sogetel and SSI submitted that population centers below 5,000 in population should remain with their surrounding rural area because servicing these small communities often implies serving the adjacent rural areas at the same time.
- Rogers adopted same position in their submissions.
- EORN proposed a 4,000 threshold.
- Xplornet proposes to increase the threshold to 30,000 (by creating Tier-5s only for medium and large pop centers). TSI disagrees with this proposal as it would not satisfy the first design principle of recognizing geographic differences and exclude too many population centres that should be Tier-5s in their own right.
- The MRC de Témiscouata proposed lowering the threshold for “small population centers” to 100. TSI submits this would result in an inordinate number of Tier-5s most of which would be unworkably small.
- TSI considers that the 10,000 inhabitants threshold proposed in its submission would represent a fair compromise between the various threshold values proposed.

IV. Ensure population center contours are smoothed out by adding grid cells at the periphery. The number of grid cell layers would depend on the growth rate at which the population center expands, ensuring that the new set of service areas will still be relevant in years to come.

- TSI notes that the proposal put forward by BCBA, Canwisp, CCSA, ITPA, Cogeco, ECOTEL, Sogetel and SSI addresses this concern.

V. Ensure large population centers are divided into several service areas in order to increase affordability to smaller stakeholders. ISED should determine which Statistic Canada administrative boundaries are best suited to achieve the purpose. TSI submits that service areas based on populations in the range of 200,000 to 300,000 would provide an appropriate balance between size and affordability in large population centers.

- Among incumbents, Bell proposed to merge CSDs to approximate large population centers; Rogers proposed to merge population centers within 30 km of each other; and, Telus proposed to merge all Census Consolidated Subdivisions (CCS) overlapping with large and medium population centers (para. 47). Quebecor for its part, proposed to merge population centers in the same vaguely defined “community of interest”.
- In TSI’s view, these proposals are not workable as an industry solution. TSI agrees in part with Xplornet that boundaries need to be drawn as close to urban areas as feasible. However, ISED needs also to consider

how to smooth the boundaries and create a space for the population centers to grow into – ref. TSI principle IV above). The proposals of Rogers, Bell, Telus and Québecor would all incorporate significant rural areas into a supposedly “urban” Tier-5 service area, thereby failing ISED’s first design principle.

- As stated above, the Québecor proposal provides no clear definition of “communities of interest”. This would require ISED to make a subjective decision for each population centre. This does not meet the third design principle (neutrality) and would greatly increase the administrative burden on ISED required to define Tier-5 service areas.
- BCBA, Canwisp, CCSA, ITPA, Cogeco, ECOTEL, Sogetel and SSI expressed the view that for extremely large population centers above half a million in population, the Tier 5 service area should not extend beyond a single Census Division (CD). They also recommended that separate Tier 5 service areas should be created for any part of the population center that extends beyond the Census Division that itself has a population of 15,000 or more. TSI submits that the approach promoted by BCBA, Canwisp, CCSA, ITPA, Cogeco, ECOTEL, Sogetel and SSI is workable.

VI. Finalize the division of the remaining rural and remote areas after the relevant population centers have been carved out into service areas that are sensible from a population and from a size perspective ensuring they nest into Tier 4 areas. TSI submits that those service areas should include at least 15,000 inhabitants whenever possible to abide by the commercial viability principle proposed. ISED could use the appropriate Statistics Canada administrative boundaries to determine the limits of the service areas.

- Telus proposed the use of CCSs as a means to amalgamate smaller CSDs into surrounding or adjacent CSDs. However, the size of CCSs vary considerably across the country and while this might be reasonable in some parts of Canada, it would not be in others. TSI considers our approach or target population size, which would require ISED to use of CCS or ADA - whichever is more appropriate in the circumstances, to be a superior approach as it results in a more consistent and coherent set of Tier-5 service areas across the country.
- BCBA, Canwisp, CCSA, ITPA, Cogeco, ECOTEL, Sogetel and SSI submitted that the target population of rural Tier 5 service areas should be 10,000, give or take 5,000 (i.e. a target ranging between 5,000 and 15,000). This implies grouping adjacent rural Census Subdivisions when the population is below this range or dividing large rural Census Subdivisions when the population is above it. They submitted that this target population range is the optimal range for ISED to achieve its policy objectives of increasing accessibility to spectrum and enhancing service to rural Canadians. TSI agrees with the joint commenters as this is a close application of the 6th principle of its proposed methodology.
- TSI notes that its approach achieves equivalent results as Québecor’s proposal that all “landlocked” areas would be amalgamated with the surrounding CSD. TSI’s approach also achieves similar results to Bell’s

proposal that “nested” CSDs be amalgamated up to a population of 30,000, but in a less arbitrary and mechanistic way.

D. Conclusions

16. Neither of ISED’s Options is fully suitable for the design of a new set of Service areas for spectrum licensing as they currently stand. TSI acknowledges that both Options contain desirable elements that should be included in the solution ISED will retain.
17. TSI’s methodology extracts advantages from each ISED Option and combines them in an alternative Option 3. The application of TSI’s methodology would result is something highly similar to the solution proposed by BCBA, Canwisp, CCSA, ITPA, Cogeco, ECOTEL, Sogetel and SSI – with the exception of the threshold applied to turn population centers into their own Tier-5 areas. TSI would apply a 10,000 inhabitants’ threshold in order to help limit the number of service areas.
18. TSI’s Proposal provides a comprehensive and fair industry solution for establishing a new set of service areas for spectrum licensing. It differentiates among rural, remote, urban and urban-fringe areas in order to take into consideration the needs of consumers, the viability of service providers, the efficient operation of wireless networks, as well as administrative efficiency for the regulator.
19. TSI therefore respectfully submits that its proposal represents the best way forward for ISED to meet its rural policy objectives, as it addresses the vast majority of other commenters’ concerns while respecting ISED’s design principles.

Yours truly,

[transmitted electronically]

Andy Kaplan-Myrth
VP, Regulatory and Carrier Affairs

cc: Marc Gaudrault, CEO
Charlie Burns, VP Technology