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

Subject: Gazette Notice No. SLPB-004-18; Consultation of Revisions to 3500 MHz Band to Accommodate Flexible Use and Preliminary Consultation of Changes to the 3800 MHz Band

Comcentric Networking Inc. has been using 3.5GHz Licences originally acquired through Industry Canada for the better part of the past 15 years to provide Fixed Wireless Internet to rural residents located in the footprint of the blocks it has been assigned.

Q1 – ISED is seeking comments on its assessment of the timelines identified for the development of an equipment ecosystem for 5G technologies in the 3500 MHz and 3800 MHz bands, and whether the timelines will be the same in both bands.

No comment as Comcentric does not influence equipment manufacturers.

Q2 – ISED is seeking comments on the proposals for:

- adding a primary mobile allocation to the 3450–3475 MHz band. No comment.
- removing the radiolocation allocation in the 3450–3500 MHz band. No comment.
- making the corresponding changes to the Canadian Table of Frequency Allocations.

No comment.

Q3 – ISED is seeking comments on the proposal to allow flexible use in the 3450–3475 MHz band.

No comment.

Q4 – ISED is seeking comments regarding interest in sharing spectrum between radiolocation and other services in the 3400–3450 MHz band, and options for doing so.

No comment.

Q5 – ISED is seeking comments on the expected impacts of the following options with regards to the continuation of existing services, competition in the Canadian marketplace and availability of new 5G services for Canadians.

Option 1 – For each licence area, existing licensees would be issued flexible use licences for one third of their current spectrum holdings rounded to the nearest 10 MHz, with a minimum of 20 MHz.

These restrictions would make it impossible to provide a reasonable broadband internet experience.

Comcentric could be forced to utilize 5 and 10MHz channels only. This would effectively cut our bandwidth to about 40% in all areas. Even if we add more sectors, that would require us to only use 5MHz channels, meaning individual sector throughput is dropped to less than 25%. We would also need to purchase new narrower sector antennas. At 5MHz channels, the theoretical maximum throughput of the sector is around 35Mbps, but realistically we can expect between 20Mbps and 30Mbps as few users will be able to utilize the maximum modulation rate.

Option 2 – For each licence area, existing licensees would be issued flexible use licences for a fixed amount of spectrum. Any licensee that holds 50 MHz of spectrum or more would be licensed for 50 MHz, and all other licensees would be licensed for 20 MHz.

With this option Comcentric would possibly be able to continue using 20MHz channels in some areas where we have only 4 sectors per tower, but any time two towers are reasonably close, we may need to drop to 10MHz channels. Comcentric uses Cambium radios in much of its operations. Cambium recommends using 2 channels on a 4 sector tower, but adjacent towers should not use the same frequencies. If you have 6 sectors with 60 degree antennas, you can use 3 channels across the board, which would require 60MHz of bandwidth.

Even with these provisions, there will be situations where reduced channel size will be necessary, and significant capital investment will be required to reach this configuration.

Q6 – ISED is seeking comments on alternative options for licensees to return spectrum to the Department to make available for a future licensing process. Respondents are asked to provide a rationale for any alternative proposals, including how they would meet ISED's policy objectives as stated in section 3.

Comcentric believes that a minimum of 60MHz or 30MHz is required to be able to efficiently utilize the bandwidth. Most solutions (both proprietary and LTE) utilize 10MHz or 20MHz

channels, and at least 3 channels are needed to operate a system even with synchronization. With 60MHz we can make sure all sites are running 6 sectors in a proper grid pattern. Licensee with > 60MHz, should be able to keep 60MHz. Licensees with between 40MHz and 60MHz should be able to keep 40MHz, and below that provide 20MHz. This will align better with the technology that is available, which is a hard limit on every Licensee. In addition, licensees should be required to return 100% of any spectrum they are not currently utilizing in a given cell, unless they can demonstrate they expect to be utilizing it within 12 months.

Q7 – ISED is seeking comments on a revised band plan using unpaired blocks of 10 MHz in the frequency range of 3450–3650 MHz.

Comcentric does not see this as an issue.

Q8 – ISED is seeking comments on whether any additional measures should be taken to limit potential interference issues with the proposed TDD band plan.

Equipment from vendors such as Cambium or Redline (largely deployed by Comcentric) may see interference from LTE gear, as timing cannot be synchronized between these products and LTE equipment.

Q9 – ISED is seeking comments on the proposal to align the timing of the issuance of flexible use licences to incumbents with the issuance of licences to those who acquire 3500 MHz flexible use licences in a future licensing process.

Comcentric does not see this as an issue.

Q10 – ISED is seeking preliminary comments on the importance of price discovery in a licensing process for flexible use licences in the 3500 MHz band.

Incumbent operators who have invested in infrastructure to make use of the spectrum they have been allocated for Rural Fixed Wireless should continue to be granted the licences as long as they are actually providing service.

Comcentric has made an investment in additional towers and base installations because the footprint of 3.5 GHz is much smaller than technologies such as 900 MHz for example. It is our opinion that any national carrier touting a new 5G service using the 3.5 GHz spectrum deployed in rural areas currently served by Comcentric will not be able to achieve an acceptable level of coverage with their current tower infrastructure.

Future licences in rural areas should not be granted unless a plan is in place, coverage is adequate and the plan is executed in a reasonable timeframe.

Spectrum holders who are simply hoarding spectrum for a service they currently do not offer should not enjoy the same privilege. Rural providers are in a constant struggle to provide adequate speeds at affordable prices. Should they be forced to compete for their operating

spectrum with national mobile carriers there is little chance regional operators will be able to finance these licences.

Spectrum auctions will have the opposite effect on ISED policy objectives in the rural area.

Q11 – ISED is seeking comments on the proposed protection and notification provisions for incumbent licensees as outlined below.

Comcentric recommends the following:

Protection period:

- For Tier 4 service areas that include a population centre of 60,000 people or more:
 - o a minimum protection period of 6 months for sites within [large urban population centres](#) and the 10 km buffer zone surrounding those centres
 - o a minimum protection period of 2 years for all other sites
- For all Tier 4 service areas that include a population centre of less than 60,000 people, a minimum protection period of 7 years

Notification period:

- a minimum notification period of 6 months in [large urban population centres](#) and in the 10 km buffer zone surrounding those centres
- a minimum notification period of 1 year in all other areas

Q12 – ISED is seeking comments on alternative transition plans, or variations to the times proposed. Respondents are asked to provide a rationale for any alternative proposals.

Time lines in affected areas should include a default one-year time period ahead of the proposed transition to reach voluntary agreements between the new licensees and incumbent licensees may provide for earlier displacement, or for the continued operation of the incumbent systems and to allot time for a rural operator to migrate fixed wireless customers to a compatible platform as this is a time consuming and expensive undertaking.

Q13 – ISED is seeking comments on whether the fixed and mobile equipment for LTE and 5G technologies will be able to operate with intermittent interference from radars, including cross-border interference, within the 3450–3650 MHz band and in adjacent bands.

Comcentric's proximity to the border means we could see radar interference. However, Comcentric is not aware of any issues we have seen up to this point in our 3425-3450 band.

Q14 – ISED is seeking preliminary comments on how to optimize the use of the 3650–3700 MHz band, including the potential use of a database access model.

Incumbent fixed wireless operators need to receive protection from all other operators as priority access licensees to maintain service.

Should the above not be maintained the database model would not be a viable option amongst regional operators across various vendors in the fixed wireless space. As any manipulation of power at the tower could have detrimental effects on customer performance especially those with a marginal connection at best.

Q15 – ISED is seeking comments on the importance of the 3700–4200 MHz band to future FSS operations.

No comment.

Q16 – ISED is seeking comments on whether unlicensed operators in the 3700–4200 MHz band should be required to submit their technical parameters to ISED to assist in frequency management.

No comment.

Q17 – ISED is seeking comments on which steps Canada should take to optimize the use of the 3700–4200 MHz band in consideration of the current services being provided and the developing technologies that would permit the use of new services in this band (e.g. exclusion zones).

No comment.

Q18 – ISED is seeking comments on the challenges and considerations related to the coexistence of other services, such as mobile and/or fixed wireless access, in the 3700–4200 MHz band.

No comment.

Comcentric's fixed wireless service is often the only affordable service available to rural residents in the footprint covered by the 3.5 GHz licences assigned to it by ISED. As an incumbent provider, actually using the spectrum to provide service, Comcentric respectfully submits that the users of the service we provide should be protected to the maximum extent possible to ensure their participation in the digital economy.

Yours truly,



Glenn Grubb
President