

SaskTel Comments

Canada Gazette Notice SMSE-005-11

Decisions on a Band Plan for
Broadband Radio Service (BRS) and
Consultation on a
Policy and Technical Framework
to License Spectrum in the Band
2500-2690 MHz

April 19, 2011

EXECUTIVE SUMMARY

- ES1. Within this submission, SaskTel submits that the propagation characteristics of the 700 and 2500 MHz bands are different, resulting in different applications and services being most suitable for these bands. The 700 MHz band is most suited for deployment of mobile broadband services in rural areas, while the 2500 MHz band is most suited for mobile services in urban areas, and fixed services in rural areas. SaskTel recommends that the upcoming auction rules should take into account the different and unique characteristics of the 700 and 2500 MHz bands, and therefore apply unique measures, if any, for each band. These bands should not be seen as interchangeable.
- ES2. 2500 MHz spectrum should not be equated to 700 MHz spectrum in some overall spectrum calculation which equates all spectrum as being of equal utility, application purpose or value.
- ES3. Given the difficult economics of building facilities in rural and remote areas, SaskTel reiterates its plea to Industry Canada to ensure that in the distribution of spectrum resources Saskatchewan residents should not be forced to wait for services until new companies have the surplus capital to consider building new facilities in low density areas. This has been shown again and again to equate into decades of these companies holding scarce spectrum to the detriment of Saskatchewan consumers. Competition in rural areas should focus on delivery of diverse services not duplicative infrastructure.
- ES4. SaskTel again urges Industry Canada to create strong incentives for companies purchasing spectrum to actually use that spectrum for the benefit of consumers, regardless of where they may live.
- ES5. To recap, SaskTel suggests rules which:
- Ensure that licensees use the spectrum they own within five years of purchase;
 - Encourage licensees to serve both rural as well as urban population centres through either increasing service coverage requirements or making changes in

Tier configurations to reflect the difference between rural and urban areas;
and

- Recognize the economic and social realities of various regions of Canada most specifically between high density urban areas and rural areas.

ES6. SaskTel remains committed to using all of the resources at its disposal to ensure that our rural residents have access to the services they demand, deserve and need.

INTRODUCTION

1. Saskatchewan Telecommunications ("SaskTel" or "the Company") is pleased to submit its Comments in response to Gazette Notice SMSE-005-11 "*Decisions on a Band Plan for Broadband Radio Service (BRS) and Consultation on a Policy and Technical Framework to License Spectrum in the Band 2500-2690 MHz*", published February 12, 2011 ("the Consultation").
2. SaskTel commends Industry Canada ("the Department") for launching this consultation, studying the best manner in which to make additional 2500 MHz wireless spectrum available to the telecommunications industry. SaskTel appreciates the opportunity to submit comments on the complex issues involved with the assignment of 2500 MHz spectrum and the implementation of a band plan for this spectrum. SaskTel urges the Department to make every effort to enact policies and licensing for this spectrum that ensure the full deployment of wireless networks in all rural areas in order to help bridge the digital divide for rural Canadians.
3. The Company has worked with the Radio Advisory Board of Canada (RABC) in the preparation of the RABC response to the Consultation, and supports the RABC submission. SaskTel's submission provides additional information and clarification on issues of key importance to SaskTel and the people of Saskatchewan.
4. The section numbering of our submission is keyed to the section numbering of the Consultation.

SASKTEL RESPONSE TO THE CONSULTATION ON A POLICY AND TECHNICAL FRAMEWORK TO LICENSE THE 2500 MHz BAND

Part B – Consultation on a Policy and Technical Framework on New BRS Licences

3. Spectrum Packaging for Licensing

3.2 Block Sizes

In preparation for the future licensing of the 2500 MHz spectrum, the Department seeks comments on the following:

- 1-1 Should the block sizes be uniform in size?**
- (a) If a uniform size is preferred, what size should be considered?**
- (b) If a mix of block sizes is preferred, what combinations and arrangements should be considered?**
- 1-2 In the specific geographic regions discussed above and shown in Appendix A, which block size option(s) should be adopted and why is this option(s) preferred over the other options? Should the combinations and arrangements of block sizes be the same or different in different areas? Provide supporting rationale.**

Provide comments separately for paired and unpaired spectrum blocks.

5. SaskTel believes that the FDD and TDD block sizes should be uniform, and that these block sizes should be 5 MHz, and that licence holders be allowed to aggregate spectrum blocks, including via spectrum swapping with other holders, so that operators can aggregate sufficient spectrum to meet their business needs. Providing 5 MHz blocks would provide the most flexibility for all licence holders. Auction participants can bid on as many blocks as desired to acquire the amount of spectrum they desire, in a fair and equal manner. SaskTel also recommends that 5 MHz block sizes be applied to all blocks in all geographical regions of the country, for both paired (FDD) and unpaired (TDD) spectrum blocks, for maximum flexibility and simplicity during the auction.
6. SaskTel notes that standards are being developed by the 3GPP and IEEE organizations that will in the very near future allow multiple carrier aggregation for

non-adjacent carriers, including aggregation across different spectrum bands. This means that operators will not necessarily have to acquire contiguous blocks of spectrum in order to implement high bandwidth services. Non-adjacent spectrum blocks can be utilized together in future LTE deployments to provide high bandwidths to each customer. Therefore, having a block size of 5 MHz will provide the most flexibility for an operator to acquire the amount of spectrum they desire, and allow market forces to more freely operate.

3.3 Tier Sizes for BRS Spectrum

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| <p>2-1 The Department seeks comments on whether the licensing of 2500 MHz spectrum should be based on uniform tier sizes across all spectrum blocks, or on a mixture of tier sizes.</p> <p>2-2 Based on your answer above, if a uniform tier size is preferred, what tier size should be adopted? If a mixture of tiers is preferred, please indicate the proposed tier(s) for each spectrum block.</p> |
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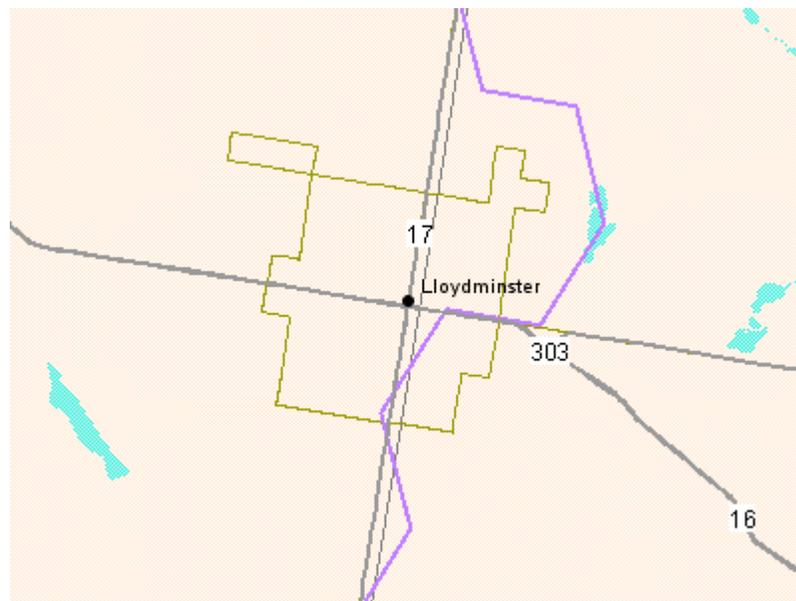
Provide supporting arguments for your responses to the above questions.

7. SaskTel believes that Tier 3 service areas are the best choice for the 2500 MHz BRS spectrum. Using smaller tier sizes could result in fractured service areas and discontinuous coverage, particularly in rural areas. If smaller tier sizes were used, operators focused on urban deployments only would shun rural licence areas in favour of urban service areas, resulting in reduced rural deployments, a key concern of Industry Canada. Finally, utilizing Tier 3 service areas would best match the licensing arrangements already in place for incumbent MCS and MDS operators who were, for the most part,¹ converted to BRS licences based on Tier 3 service areas.
8. SaskTel further recommends that the Tier 3 service areas should be utilized uniformly across all spectrum blocks, in all geographic regions per Appendix 1 of the Consultation.
9. SaskTel notes from the Consultation the statements made by Industry Canada regarding the Tier 3 service area boundary around Lloydminster. Specifically, the Department restates their belief that the rationale of not having a service area

¹ The exception being the MCS spectrum licences held by Inukshuk and SSI Micro in Northern Canada which were converted to Tier 4 service areas to match their existing spectrum licence coverage. This is described in section 3.3 of the Consultation.

boundary cut through a population centre to avoid potential interference problems is still valid despite the impact this could have on customer choice within a given centre. The Department also states that the tier areas established in *Service Areas for Competitive Licensing* will not be modified.²

10. The Tier 3 service area boundary for Lloydminster is depicted below, directly obtained from the SpectrumGeo portion of the Industry Canada website.³ This clearly shows the existing Tier 2, Tier 3, and Tier 4 service area boundary as it relates to the Lloydminster municipal boundaries. It also demonstrates that Industry Canada has in fact only subdivided a portion of the Saskatchewan side of this city.



11. SaskTel commends the Department for treating the conversion of the Company's MCS spectrum licence to a BRS spectrum licence in a fair manner, and recognizing the exceptional circumstances surrounding Lloydminster and the 2500 MHz spectrum licences.
12. As a full telecommunications service provider, SaskTel will, as per its mandate, be providing wireline based services to all residents on the Saskatchewan side of Lloydminster. We will also be providing wireless services to those residents of

² Part B, Section 3.3 of the Consultation.

³ http://spectrumgeo.ic.gc.ca/txt/sl_map-eng.html

Lloydminster within the service areas of our existing spectrum licences despite the additional expense caused by the random division of Lloydminster.

13. SaskTel also wishes to note that as per our market studies and forecasts the southeast portion of Lloydminster which is primarily residential in nature is experiencing rapid growth at this time, and SaskTel is committed to and taking measures to ensure those residents are well served with wireless services. With advances in wireless network technologies, and cooperation and coordination between service providers, SaskTel is of the firm belief that this can and will be accomplished without causing harmful interference.

14. Furthermore, SaskTel continues to believe that changes to the tier area boundaries around Lloydminster are worthy of further consideration by the Department.

4. Promoting Competition

4.1 Spectrum Aggregation Limits and Spectrum Set-Asides

3-1 If the Department determines that there is a need for measures to promote competition in the wireless services market, which of the above mechanisms would be most appropriate in the 2500 MHz band and why should this mechanism be considered over the other? Comments should also indicate if further restrictions should apply.

In light of your response above, and recognizing that pending decisions on block sizes and tier sizes could influence your response:

3-2 (a) If the Department were to implement spectrum aggregation limits (caps), should a cap apply to the 2500 MHz band? If a cap is necessary:

(i) What should be the size of the cap and should this be specific to either the paired and/or unpaired spectrum bands?

(ii) Should bidders and their affiliates or associates share the cap?

(iii) How long should the cap remain in effect?

(b) If the Department were to implement a set-aside in the 2500 MHz auction:

(i) Who should be entitled to bid in the set-aside block(s), and should the entitled bidders be restricted to bidding on the set-aside only?

(ii) How much spectrum should be set-aside and which block(s) should be set-aside?

(iii) If the set-aside were to include multiple blocks of spectrum, should these blocks be contiguous?

(iv) What restrictions should be put in place to ensure that policy objectives are met (for example, should trading of the set-aside be restricted for a given time period)?

3-3 Are there other mechanisms that should be considered in the 2500 MHz band to promote competition? If so, how should such mechanisms be applied in this band?

3-4 The Government of Canada has undertaken a consultation on potential changes to the foreign investment restrictions that apply to the telecommunications sector. How would the adoption of any of the proposed changes affect your responses to the questions above?

Please provide supporting evidence and rationale for all responses.

3-5 The Department is seeking specific spectrum usage information from current commercial mobile licensees and entities interested in acquiring commercial mobile spectrum:

Do you plan to use the 2500 MHz spectrum acquired in the auction with, or on behalf of, another entity, which may participate in the auction? If yes, with which entity?

Your comments to this question will be treated as confidential provided that they are submitted separately (e.g. in an appendix) and clearly marked as “Confidential.”

15. SaskTel strongly believes that there is already healthy competition in the wireless industry in Canada. With the changes introduced by the Department in the AWS auction, the Canadian industry now includes a diverse combination of large national players, regional operators, MVNOs and smaller competitive startup companies as well as cable television players who are expanding their operations into new lines of business. Indeed, some of the most powerful ‘new entrants’ will likely be the cable companies who obtained spectrum in the AWS auction. These companies have financial resources and existing customer bases which some of the other new entrants will not be able to match.

16. The smaller startup companies have not yet had sufficient time for judgments to be made on their long-term sustainability, but they appear to have already had an impact on the market. Prices are dropping and changes, such as the ability to unlock handsets are being incorporated into the practices of the large players as well as the new entrants. Therefore, it appears that the changes introduced previously by the Department have been a success. As such, there is no reason to introduce additional

measures at this time. Any analysis of the state of the market should not be done until the rollout of these various new entrants is more mature. And finally, incentives which lead to even more competitors entering the market at this time will only fragment that proportion of subscribers likely to move to a competitor in the short term, thus harming all new entrants.

17. For all of these reasons, SaskTel does not believe that the Department should introduce additional measures intended to promote competition in the wireless industry. Rather, SaskTel believes that the spectrum should be auctioned in a free and open manner, without restrictions, letting market forces determine spectrum licence holders, unencumbered by artificial restrictions.
18. Finally, as mentioned below in our comments on 'promoting service in rural areas', although it does not have the wide-ranging benefit for rural customers that spectrum in the 700 MHz band does, SaskTel does envision use of 2500 MHz spectrum to provide fixed services such as High Speed Internet and basic telephony to dispersed rural dwellings. SaskTel does not believe that any other successful license bidder will make use of this spectrum in these areas. Therefore, SaskTel should at least have the right to bid on that spectrum in an open, market-based auction.
19. However, should the Department see the need to artificially support the well financed new entrants, SaskTel submits that the preferable method would be to introduce a set-aside as was done in the AWS auction. As well, any measures introduced should only be applied to the 2500 MHz spectrum at issue in this consultation, and not allowed to influence conditions under which 700 MHz spectrum is auctioned. The propagation characteristics of the 700 and 2500 MHz bands are different, resulting in different applications and services being most suitable for these bands. The 700 MHz band is most suited for deployment of mobile services in rural areas, while the 2500 MHz band is most suited for mobile services in urban areas, and fixed services in rural areas. Because of these differences, SaskTel recommends that any measures taken by the Department to artificially support new entrants should take into account the different and unique characteristics of the 700 and 2500 MHz bands, and that therefore, the requirement for such measures be assessed individually for each spectrum band.

20. SaskTel notes the Government of Canada consultation on potential changes to foreign ownership investment restrictions in the telecommunications sector. Any potential changes to the foreign ownership restrictions, if adopted by the Government of Canada, would not affect any of SaskTel's positions or recommendations on the issues raised in this consultation.

21. SaskTel's response to question 3-5 can be found in confidential Annex 1 of SaskTel's submission in response to Gazette Notice SMSE-018-10 (the 700 MHz consultation), submitted in confidence to Industry Canada. The same response provided for the 700 MHz spectrum equally applies to 2500 MHz spectrum.

4.2 Promoting Service Development in Rural Areas

4-1 Comments are sought on specific measures that could be adopted within the 2500 MHz spectrum auction process to ensure further deployment of BRS in rural and remote areas (e.g. roll-out conditions, tier structure, etc.).

22. SaskTel submits that the major conditions of licence needed to ensure development in rural areas should be twofold:

- Spectrum owners must demonstrate use of the spectrum within 5 years of the licensure; and
- Spectrum owners must demonstrate the provision of services beyond Census Metropolitan (CMA's) areas.

23. Experience has demonstrated that most spectrum holders do not expand their service areas beyond CMA's and/or along major highways. In order to avoid waste of this scarce public resource SaskTel recommends that Industry Canada examine how the 2500 MHz will be used in rural areas.

24. As pointed out by the Seaboard Group, the delivery of telecommunications in rural and remote areas is predominantly different than delivery in denser urban areas. In particular Seaboard stated: "it makes practical economic sense to have a single infrastructure that could be shared by companies that require access to the resource."⁴ In rural and remote areas, the costs involved with a duplication of

⁴ The SeaBoard Group, *The Woods are Lovely, Dark and Deep: The Case for a Remote-Rural Exception in Frequency Allocation*, 6 April 2011.

infrastructure could in fact result in a situation where no service at all is available for rural residents.

25. In rural and remote areas competition in telecommunications services will not be based on the traditional concept of facilities-based competition but rather on vigorous competition for services delivered over one infrastructure. Multiple infrastructures cannot be supported in low density population areas. SaskTel has recognized this basic market concept. Accordingly it has built a robust infrastructure and reached agreements with other service providers so that wholesale service revenues can be used in addition to retail revenues to offset the cost of that infrastructure. This provides residents with a stable delivery platform and most importantly with choice.
26. In most rural areas, and in particular Saskatchewan, new entrants or even established players such as Rogers will not build competing infrastructures in the foreseeable future.
27. SaskTel would contend that to place spectrum for rural and remote areas of Saskatchewan in the hands of new entrants is to ensure that the bulk of this resource will remain unused for more than the next decade. Barring companies such as SaskTel from access to spectrum and making them less efficient would actually harm rural consumers.
28. The 2500 MHz spectrum is very unlike that of the 700 MHz mobile spectrum and will be used differently in rural areas. As SaskTel pointed out in its Reply arguments to Industry Canada on the 700 MHz spectrum auction: “700 MHz spectrum has a longer reach compared to higher frequency PCS, AWS, and BRS (2.5 GHz) spectrum bands, minimizing the number of required towers, and the related quantities of radio site equipment, as well as reducing the cost of installing fibre based backhaul facilities to serve each tower location, which is very expensive.”
29. The 700 MHz spectrum is a more efficient approach to mobile broadband in rural areas than any other spectrum available today. The BRS (2.5 GHz) is more likely to be used for fixed services in rural areas and in Saskatchewan specifically for the delivery of basic telecommunications services.

30. SaskTel is currently designated as the carrier of last resort for a number of communications services to residents in remote and rural areas. Traditionally that has meant providing basic telecommunications services via copper wire to farms and very small villages. The definition of basic services for these residents is expanding and the older methods of connecting residents with copper are both too expensive and inadequate to meet customer demands.
31. This copper plant in most rural areas is at or nearing the end of its lifespan. In deep rural areas SaskTel will not and cannot economically plow new fibre optics to replace that copper. Plowing presently costs some \$13,000 per kilometre in most of Saskatchewan's rural areas. In more northern areas the costs are even higher.
32. SaskTel plans to use the 2.5 GHz as a fixed wireless replacement for the provision of basic services to farms, isolated businesses and very small towns.
33. As SaskTel pointed out in its presentations to the CRTC on Basic Telecommunications Services, alternatives to wireline local service that can deliver a Basic Service Objective level of service reliably and at a price level consistent with wireline service should be considered to satisfy the BSO. For instance, certain remote northern areas in Saskatchewan have local service which would appear from within the residence to be identical to fully wired local service, but which is actually provided via fixed wireless connection between the remote rural community and the serving switching centre. SaskTel is investigating methods of creating additional connections of this sort using the 2500 MHz system.
34. SaskTel is contemplating a fixed wireless solution rather than merely relying on cellular service because cellular service, while extremely useful for certain customers, does not provide BSO at an affordable and reliable level at this time. There are a number of reasons for this.
 - Especially in rural areas, cellular service does not provide the same consistent, nearly ubiquitous, coverage as wireline local service. Cellular reception is best in the open air; degrades somewhat within vehicles; and is at its worst within buildings. This makes cellular a less effective substitute for local wireline service, which is intended to function within buildings.

- Even within areas that typically have good cellular coverage, that coverage can be degraded by such things as weather, type of building construction and battery strength of the user handset.
- Cellular reception is best within close proximity of a tower and degrades as distance from a tower increases. The residents whom SaskTel is contemplating serving with fixed wireless in the future are likely to reside at larger distances from cellular towers.
- Mobile wireless networks are not built to the same reliability specifications as local wireline networks and do not guarantee the quality of service that Canadians have come to rely on from their local wireline service.

35. SaskTel has demonstrated its willingness and its ability to use spectrum in the most efficient manner to the benefit of rural and remote residents. To do less would be a disservice to these citizens.

36. SaskTel recommends that steps be taken by Industry Canada to ensure that the 2500 MHz spectrum does not lie fallow in rural areas by making provisions to allow for its use by operators in rural areas that are working to bridge the digital divide for rural residents. SaskTel believes that rural use of this spectrum can co-exist with urban deployments, even by different operators.

5. Auction Timing

37. Please refer to SaskTel's comments on the 700 MHz consultation for our views on the auction timing process where SaskTel submitted that in the interests of efficiency both the 700 MHz auction and the 2500 MHz auction should be held simultaneously.

CONCLUSION

38. SaskTel is pleased to have had the opportunity to provide comments to the 2500 MHz consultation. There are many complex issues and questions for the Department to consider regarding the future development of this spectrum, allowing the deployment of new and innovative broadband wireless services for Canadians.
39. SaskTel has argued that in rural Saskatchewan, competition will be with services and not with facilities, due to the widely dispersed population. SaskTel is hopeful that we have provided sufficient information to Industry Canada to understand the Saskatchewan service challenges demonstrating that hindering SaskTel in the auction will not be in the overall best interests of Saskatchewan customers.
40. SaskTel has a mandate to serve Saskatchewan customers, rural and urban, as holistically and efficiently as possible. Access to a range of spectrum resources is crucial in fulfilling that mandate.
41. SaskTel trusts that the comments provided in response to the consultation can provide the Department the advice and direction needed to establish policies that will see the 2500 MHz spectrum developed to the maximum benefit of all Canadians.