

SaskTel Comments:

Canada Gazette Notice SMSE-018-10

Consultation on a
Policy and Technical Framework
for the 700 MHz Band and
Aspects Related to Commercial Mobile Spectrum

February 28, 2011

EXECUTIVE SUMMARY

1. The following represents SaskTel's submission in response to Gazette Notice SMSE-018-10 consulting on the policy and technical framework for the 700 MHz band auction, including aspects related to Commercial Mobile spectrum.
2. SaskTel notes the timeliness of a 700 MHz auction. As the only cellular network provider for the majority of rural Saskatchewan, SaskTel wishes to stress the importance of having access to this band in order to ensure that our residents are able to participate in the social and economic aspects of the digital economy. Absent adequate spectrum that is able to span the vast distances of our province many of our residents will experience the real impacts of the so called 'digital divide'. Addressing this digital divide is especially important in Saskatchewan, where the CRTC classifies some 42% of residents as rural.
3. It is SaskTel's belief that the Federal objectives of improving rural access to high speed data must be considered as paramount in this auction, since 700 MHz spectrum is ideal for rural applications. The goal of improving rural access should be placed well above those of generating new one time revenues for the Federal government or promoting the expansion of new cellular service providers, who are unlikely to enter the rural environment. With this theme in mind, in general SaskTel takes the following positions.
 - SaskTel's confidential responses to certain questions are included in Annex 1 to this submission. SaskTel believes that additional commercial mobile spectrum is indeed required at this time, due to the explosive growth in data usage per wireless device especially in rural areas where access to high speed applications has been traditionally absent. Given the growing need for spectrum in rural areas, SaskTel is calling for Industry Canada to create rules which would guard against hoarding or speculating in the 700 MHz spectrum. All buyers of spectrum in this auction should be required to use or lose access to this spectrum within 5 years.
 - SaskTel supports the adoption of the FCC band plan for Canada but the rules should emphasize the need to serve rural populations as well as urban. SaskTel

is proposing that special consideration be given to the Upper C block of this spectrum. Licence holders for this block should be required to serve 90% of the population within the Tier within five years. This will ensure that at least one participant in a given Tier will roll out services to rural areas rather than focusing exclusively on the more lucrative urban markets. In other blocks of the 700 MHz band, a 50% service target would be adequate.

- Within the parameters above, SaskTel would submit that only Tier 2 licences be given. There is no single national carrier or company which could guarantee rural services in all areas of Canada within a 5 year period.
- SaskTel also submits that some amount of spectrum should be set aside for public safety use. The extent of that spectrum allocation must be balanced with the needs of public safety and those of the growing commercial networks. Provincial public safety agencies must have flexibility to use that spectrum in a manner which matches the differential circumstances in any given province. Given the scarcity of spectrum, measures must be taken to ensure that it is used efficiently.
- SaskTel believes that there must be recognition of how market forces work differently in rural and urban areas. In urban areas there is significant facilities-based competition in the wireless industry. In rural areas such as Saskatchewan competition is primarily in services not in facilities. Population densities do not support the economics of more than one infrastructure. Various companies use SaskTel's infrastructure to provide services. This means that access to spectrum by the base facilities provider is crucial if all cellular companies are to serve their specific customers. The structure of the auction cannot be used to exclude these rural delivery systems by either imposing bandwidth caps or other limitations.

INTRODUCTION

4. Saskatchewan Telecommunications (“SaskTel” or “the Company”) is pleased to provide this response to Gazette Notice SMSE-018-10 “*Consultation on a Policy and Technical Framework for the 700 MHz Band and Aspects Related to Commercial Mobile Spectrum*”, dated November 30, 2010 (“the Consultation”).
5. SaskTel commends Industry Canada (“the Department”) for providing an opportunity for the telecommunications industry to submit comments on the complex issues involved with the assignment of 700 MHz spectrum made available by the conversion to digital television broadcasting, and the implementation of a band plan for this spectrum. SaskTel sees the 700 MHz band as being a key piece of spectrum for extending and expanding service to rural areas.
6. SaskTel is mandated to provide telecommunications services to all residents of Saskatchewan. As part of this mandate, we are required to provide wireless broadband services to both urban and rural subscribers. Many of these rural residents are located in sparsely populated and isolated parts of the province, making it a great challenge to provide these services. The ability to provide wireless broadband is dependent on a combination of the magnitude of the spectrum available, the frequency of the spectrum available, and the distribution of towers. To make meaningful inroads into providing service over the 660,000 square kilometres of Saskatchewan there is a need for both a high number of towers and access to significant spectrum resources. SaskTel is currently the only service provider whose network supports wireless services offered by SaskTel and other competitors in deep rural Saskatchewan and expects to remain so. Access to the 700 MHz spectrum is critical for SaskTel’s ability to expand coverage to more remote areas of the province and to improve the quality of access (for example, enhancing data speeds) in areas that SaskTel already covers.
7. At the same time it has made substantial investments in its network build out to cover these remote high-cost areas, SaskTel has signed agreements with other wireless

service providers (WSP's) allowing them to offer competing wireless services to all residents covered by SaskTel's network footprint. Given the high costs of providing wireless services in rural Saskatchewan, any business case which relies on a redundant network build to cover this territory would not be compensatory.

8. In order to continue offering high quality service to Saskatchewan residents, SaskTel needs access to suitable spectrum that can provide the bandwidth for future growth and meet the ever-increasing demands of future data applications. The 700 MHz band is well suited for providing service in rural regions. Its propagation characteristics provide greater range compared to other wireless broadband spectrum. This results in fewer sites being required to cover a region, and therefore lower infrastructure costs as well as fewer public concerns with tower siting. SaskTel sees access to 700 MHz spectrum as key to providing and upgrading wireless broadband services to the rural residents of Saskatchewan. As several large WSPs are making use of SaskTel's network facilities and infrastructure, SaskTel's acquisition of additional spectrum will help maintain competitive alternatives for these rural customers.
9. SaskTel has worked with the RABC to develop the RABC response to this Gazette notice, and supports the RABC submission to this consultation. Several key issues raised in this consultation are of critical importance to SaskTel, and this document will provide further clarification of SaskTel's position on the issues raised.
10. Below, SaskTel offers our responses to the specific questions raised by the Department in the consultation. The section numbering of this document corresponds to the numbering of the consultation paper.

SASKTEL RESPONSE TO THE CONSULTATION ON A POLICY AND TECHNICAL FRAMEWORK FOR THE 700 MHz BAND AND ASPECTS RELATED TO COMMERCIAL MOBILE SPECTRUM

4. Commercial Mobile Services

4.2 Stakeholder Holdings, Demand and Business Considerations

4-1. What is the general need for additional commercial mobile spectrum at this time and what do you anticipate the future needs to be?

11. Please refer to Annex 1 of our submission.

4-2. Provide general deployment information on the current use of your existing holdings in each mobile spectrum band. In the case where current holdings are not being used, provide information on its planned use, including timelines.

12. Please refer to Annex 1 of our submission.

4-3. Indicate your need for additional spectrum for commercial mobile service applications and how much spectrum is required.

(a) What deployment timelines are being considered?

(b) What types of applications/uses are envisioned?

(c) To what degree will your business' anticipated spectrum needs be addressed by having access to the 700 MHz and/or 2500 MHz spectrum?

13. Please refer to Annex 1 of our submission. Note however that SaskTel does strongly believe that one of the conditions of obtaining a 700 MHz licence should be that deployment of that spectrum occur within 5 years. One of SaskTel's major uses of the 700 MHz spectrum will be to expand access to data capacity in rural areas.

4-4. Do you plan to use 700 MHz spectrum acquired in the auction with, or on behalf of, another entity, which may participate in the auction? If yes, with which entity?

14. Please refer to Annex 1 of our submission. Note, in summary, that SaskTel does not intend to acquire spectrum on behalf of another entity.

4-5. Provide comments on the extent to which alternate spectrum access arrangements have been investigated/considered to respond to your need for additional spectrum. In addition, provide specific efficiency measures investigated or implemented for current holdings.

15. Please refer to Annex 1 of our submission for details. SaskTel has approached the owners of un-used spectrum that has been lying fallow for some time. These owners neither wish to sell this spectrum nor do they seem to have any plans to use that spectrum. This has caused SaskTel to ask Industry Canada for mechanisms in this auction to ensure that, in future, this scarce commodity is actually used within a 5 year period.
16. Regardless of attempts to obtain un-used spectrum, SaskTel believes that there is no comparable spectrum to the 700 MHz for the service of rural residents.

5. 700 MHz Band Plan Issues and Considerations

5.1 700 MHz Band Plan Architecture for Commercial Mobile Systems

5-1. Based on the criteria listed above, which of the four band plan options should be adopted in Canada? Why is this option preferred over the other options? If Option 3 (APT band plan) is selected, what should the block sizes be?

In providing your responses, include supporting arguments, including potential benefits to wireless subscribers.

17. SaskTel recommends to Industry Canada that Option 1, the FCC band plan, be adopted for use in Canada. Although there are some advantages to the other options proposed by Industry Canada in the consultation, the benefits of the FCC band plan outweigh the potential drawbacks. Our proposal is shown below in Figure 1.

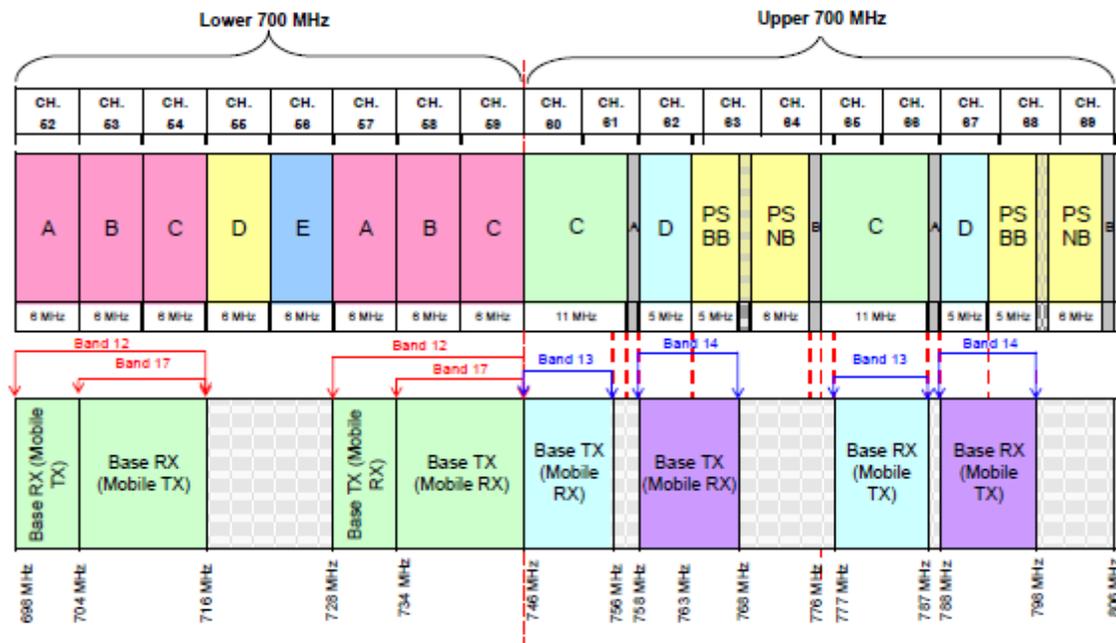


Figure 1 Recommended 700 MHz US FCC Band Plan ¹

18. SaskTel further recommends that the block sizes, block edges and duplexing arrangements be harmonized as closely as possible to the 700 MHz band plan as laid out in FCC regulations and 3GPP technical standards.
19. Although SaskTel recognizes that the FCC band plan is not perfect, and that there may be some inefficiencies in deploying LTE equipment based on 5 MHz wide channels within the FCC band plan, there are several important advantages gained by the wireless industry through the use of the FCC band plan.
 - a) Economies of scale from vendor and handset manufacturers through their ability to provide a standard device that can be supplied to both the Canadian and American markets, that also meets 3GPP standards. This will result in lower overall consumer device costs.

¹ Reproduced from Figure 5.2, page 15 of Industry Canada Gazette Notice SMSE-018-10 “Consultation on a Policy and Technical Framework for the 700 MHz Band and Aspects Related to Commercial Mobile Spectrum” (The Consultation).

- b) Ease of roaming attained with an aligned band plan. User devices with common chip sets and band arrangements will be able to roam without difficulty.
- c) Cross-border coordination and interference issues will be greatly reduced, and spectrum will be planned and used far more efficiently in the border regions due to the compatibility between Canadian and US spectrum and networks.

20. SaskTel does not recommend either option 2A or 2B because neither option as presented in the Consultation lines up exactly with the FCC band plan block edges. Although it appears that these band plan options are viable, and have some advantages such as a 5 MHz block size and some wider spectrum blocks, SaskTel still believes that it would be more advantageous for the industry to harmonize with the FCC band plan, and adopt option 1.

21. SaskTel does not recommend option 3, the adoption of the Asia-Pacific Telecommunity (APT) band plan. The APT band plan does offer the most efficient band layout for deployment of broadband LTE networks using large channel bandwidths. However, it does not appear that the APT band plan will be considered or adopted for use in either the United States, or Europe. There are great uncertainties as to when devices and handsets will be standardized and developed that utilize the APT band plan. The incompatibilities between the APT band plan and the US band plan would create cross-border interference and coordination issues that would be extremely difficult to manage. Roaming to the US would be impossible without the use of expensive high end user devices that feature multiple spectrum bands and multiple modes. Finally, adopting the APT band plan would be extremely disruptive to planned and existing Public Safety systems, forcing the movement of these Public Safety systems to other spectrum, and these Public Safety systems would no longer be compatible with their US counterparts. SaskTel believes that the adoption of the APT band plan would not be an overall benefit to the wireless industry and Canadians in general.

5-2. The band plans presented in the options above include guardbands. Should the Department auction the guardbands, or should these frequencies be held in reserve for future use such that they are technically compatible with services in the adjacent bands?

Also comment on any related aspects not addressed above or other possible options, including combinations of options.

22. SaskTel does not believe that, at this point in time, there are any applications or services that could utilize the guard band spectrum without causing interference to planned networks in the adjacent spectrum blocks. SaskTel believes that the guard bands should be held in reserve by Industry Canada until a use can be identified that is technically compatible with FDD and TDD based services in the adjacent bands. Any future guard band licensee should be required to demonstrate how this spectrum can be utilized without disrupting services in adjacent spectrum blocks.
23. The primary objective in allowing licensees to use the guard band spectrum is the protection of licensed FDD and TDD based services in the adjacent band. SaskTel notes the recent decision by the Department to allow restricted operation by licensed users in the guard band spectrum separating the FDD and TDD portions of the 2500 MHz BRS band.² The restrictions include licensing on a non-interference non-protected basis with respect to FDD systems in the adjacent bands.
24. SaskTel recommends that, should the Department decide to license the 700 MHz guard band spectrum, the guard band spectrum also be licensed on a non-interference non-protected basis, with restrictions similar to the 2500 MHz restricted spectrum. This would include the requirement to cease operations if interference is caused to adjacent FDD systems.

² Industry Canada Gazette Notice SMSE-005-011 “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”, sections 1.7 and 1.9.

5.2 Options for use of 758-768 MHz Paired with 788-798 MHz for Public Safety and/or Commercial Systems

5-3. Do public safety agencies need spectrum for broadband applications? If so:

(a) How much and for which type of applications?

(b) What are the anticipated deployment plans and the possible constraints, if any, in implementing these plans?

(c) Is there suitable alternate spectrum to the 700 MHz to meet these broadband requirements?

25. SaskTel believes that public safety agencies will, in the relatively near future, need spectrum for wireless broadband applications. Although those applications may not be clearly defined at this time they could possibly include medical imaging and patient information; provision of mapping information or building blueprints for use by police and fire agencies; real time database access, and other information needed by various public safety agencies.
26. Although these needs may remain unclear at this time, SaskTel firmly believes that they will become clearer in the near future, and that some amount of spectrum should be set aside by the Department to meet the future needs of these agencies. SaskTel submits that the amount set aside should be a balance between the needs of public service agencies and the growing need for spectrum in the commercial sector.
27. Public safety agencies must be given the flexibility to use their spectrum allocation in a manner which meets their objectives and those of the Province they serve.
28. SaskTel further submits that, although spectrum should be set aside for the use of public safety agencies, in many instances such agencies may not have the expertise to design and build a system to make use of this spectrum and also may not have a fulltime need to use the complete bandwidth capacity of a large block of spectrum. One method of achieving the appropriate utilization of spectrum would be to undertake partnerships with commercial or other providers to most efficiently utilize this spectrum. These arrangements would necessarily give priority access for the public safety groups to network resources and priority usage of the spectrum

allocated. However, when such demands were not being placed on the public safety spectrum, it could be used for other purposes.

29. The advantages of such an arrangement would be:

- the more efficient use of the public safety spectrum, while still meeting the needs of the agencies involved,
- other operators could bring expertise to the design, construction, operation and management of the public safety network,
- this would result in increased capacity and coverage for the public safety networks; and
- this could create significant savings for both taxpayers and provincial governments.

5-4. Comments are sought on the need for public safety broadband radio systems to be interoperable:

(a) between various Canadian public safety agencies;

(b) between Canadian and U.S. public safety agencies.

30. Consultation with Saskatchewan's Ministry of Corrections and Public Safety has led SaskTel to conclude that interoperability between public safety broadband radio systems, be they operated by Public Safety or a commercial enterprise, is essential.

31. Recent experience in the province has led to this conclusion. Corrections and Public Safety recently worked with several groups to implement a narrowband public safety system in the province. However, variance between systems used by municipalities continues to create challenges for this P25 system.

32. To avoid situations like this occurring with broadband public safety systems, spectrum allocated to public safety broadband must be allocated to the Province rather than to particular agencies or municipalities in order to ensure interoperability.

33. Interoperability means that networks and handsets must be standards based. If the public safety networks were to adopt standards which were significantly different from those used in commercial networks it would mean a substantial increase in costs to public safety agencies to acquire user devices without the benefits of the large economies of scale afforded to standardized commercial devices.

5-5. What are the challenges faced today by public safety agencies to have cross-border radio interoperability in other frequency bands?

34. Provincial public safety systems are building voice grade systems (P25). Even within these systems there are variations in specific systems used by specific municipalities and agencies.
35. In order to ensure a standards-based system, public safety spectrum should be assigned to the Provincial public safety group for each province, and not to specific individual agencies, to apply and use as they see fit. Only the Provincial umbrella organization can effectively manage and use the spectrum and still ensure interoperability. Attempting to coordinate all of these agencies at a level lower than that of a province could create major delays.
36. Imposing nation-wide rules would be ill-advised given the lack of one national public safety authority on that level. For example, although the RCMP do policing for Saskatchewan in all rural areas, this is not the case in other provinces. In addition, it is unclear how such a national system would be funded.
37. SaskTel also submits that the best way to ensure this interoperability is to use the same network standards as used in commercial systems. Commercial system standards such as those established by 3GPP have already addressed the interoperability issues.

5-6. Notwithstanding your responses to questions 5-3 to 5-5, the Department seeks comments on whether public safety broadband needs can be met by using commercial systems with priority access rights for public safety, at commercial rates.

(a) Your views and comments are invited on priority access rights, including pre-emption, and on the feasibility of such a system.

(b) What public safety technical and operational requirements cannot be met by commercial systems, from either a public safety or commercial operator point of view?

(c) What specific rules, if any, should be mandated by the Department to make such a system viable?

38. SaskTel can provide priority access to groups of users on a wireless broadband network. By utilizing existing infrastructure, SaskTel is in a position to provide a wireless broadband network for public safety users that would be very robust, and provide reliable coverage, at a lower cost for the public safety community, reducing the capital budget needs for the public safety agencies. SaskTel also has the expertise to manage and operate the network more effectively than public safety agencies, due to the fact that the focus of public safety agencies is protection of life and property, not designing, installing, and operating telecommunications networks.

39. SaskTel does not believe that the Department would be required to put in regulations to govern the business arrangements between the commercial operators and the public safety agencies. If public safety users were given flexibility in the use of spectrum they would have an attractive negotiating tool to achieve priority access.

5-7. Comments are sought on the need for regional (local, provincial, etc.) dedicated broadband networks to provide access to all public safety agencies, and the institutional feasibility of implementing such a system.

40. Dedicated public safety networks at a level below that of the province would be quite hard to coordinate and manage among multiple agencies. At a provincial level, such networks would be much more feasible as the vast majority of such agencies are coordinated, to some extent, on a provincial level already. For example, in Saskatchewan, there is already a province wide narrowband version (P25) of such a network in place, coordinated at the provincial level.

5-8. Is there a need for a dedicated national interoperable broadband network to provide access to all public safety agencies? The Department seeks comments on the institutional feasibility of implementing such a system.

41. It would only be possible to ensure that all institutions would adopt such a system across Canada if the Federal Government were willing to pay for such a national public safety broadband system. SaskTel recommends that the integration of the public safety system should be left at the Provincial level with the provinces able to pay for or utilize spectrum resources in the best way possible. Waiting for the implementation of a national contract or program, given the diversity of agencies in

Canada, could cause delays in terms of years. We would point out that even at this time not all provinces have adopted the P25 network.

42. Saskatchewan, as an example has a strong province-wide governance structure for the coordination of public safety agencies. Nationally there is no structure with experience in actually building or maintaining a network.

43. It should also be noted that in developing a network for public safety, such as the P25 the cost now falls squarely on the shoulders of the province. The Province needs to be given the flexibility to use its funding as efficiently as possible.

5-9. If band plan Option 1, 2a, or 2b in Section 5.1 is chosen, which one of the three options described above should be adopted and why is this option preferred over the other options? Provide supporting rationale.

44. SaskTel submits that the amount set aside for public safety should represent a balance between the volume of usage required by public safety users and the increasing volume of traffic needed by commercial operators.

45. SaskTel is concerned that a 20 MHz block of public safety spectrum would be underutilized in most, if not all, areas of Canada. SaskTel believes that some of this concern could be alleviated if public safety agencies were encouraged to enter into agreements with commercial operators allowing surplus capacity of the public safety spectrum to be utilized for pre-emptible commercial traffic. This would allow the spectrum to be used most efficiently, while still maintaining priority access for critical public safety services.

5-10. If commercial operators are mandated to support public safety services, what tier size should be applied in order to ensure adequate public safety coverage?

46. Because the major public safety users of the wireless broadband network will be either provincial or federal agencies, a large area network is required, covering as much of the province as possible. Large area public safety networks are most likely to be coordinated and managed on a provincial basis. Therefore, SaskTel recommends that, should Industry Canada allocate any or all of the public safety broadband spectrum blocks to commercial operators, tier 2 service areas should be utilized for spectrum licensing.

5-11. If the APT band plan (See Option 3 in Section 5.1) is adopted:

(a) Given that the APT band plan requires a 55 MHz duplexing separation, can Canadian public safety services operate their current narrowband systems in this band plan configuration? If not, what are possible alternatives to address public safety needs?

(b) Should spectrum be designated for dedicated public safety broadband systems, and how much?

47. SaskTel does not favour implementation of the APT band plan. It is our belief that implementation of the APT band plan will be too disruptive to existing and planned public safety operations. The public safety narrowband radio equipment is clearly not compatible with the APT band plan. If narrowband public safety systems were allowed to continue operating on their current allocations, then a large portion of the 700 MHz band would be rendered unusable if the APT band plan were deployed in the remaining portions of the band. The loss of this much usable spectrum would negate any advantages achieved by using the APT band plan.

48. It is also not reasonable to require the public safety users to replace their equipment. Any replacement equipment they could obtain that is compatible with the APT band plan (if such equipment exists) would not be compatible with US public safety radio equipment. This would create serious impediments to cross-border interoperability by public safety agencies. Cross border interference and coordination issues will be very difficult to manage, and cross border roaming will be impossible.

49. For all of these reasons, SaskTel does not favour the implementation of the APT band plan.

5.3 Tier Sizes for 700 MHz Auction of Commercial Spectrum

5-12. The Department seeks comments on whether the auction of 700 MHz commercial spectrum should be based on uniform tier sizes across all spectrum blocks, or a mixture of tier sizes.

50. SaskTel believes it would be most advantageous to utilize uniform tier sizes across all spectrum blocks, and that as further explained below Tier 2 service areas should be used for the 700 MHz spectrum auction. Common tier sizes facilitate substitution among blocks during the auction, resulting in a more efficient allocation of licenses.

In the FCC's 700 MHz auction, the C block sold for substantially less money than the A and B blocks in large part due to the inability of bidders to substitute from the A and B blocks to the C block during the course of the auction. Verizon was the only bidder with sufficient eligibility to jump from the smaller blocks to the larger licenses in the C block and therefore was able to get the spectrum for much less money than bidders paid for comparable spectrum in the other blocks. As a result, efficient auction design would lead to similar size tiers across blocks.

5-13. Based on your answer above, what tier size(s) should be adopted?

51. SaskTel believes that Tier 2 service areas should be used for licensing 700 MHz spectrum. Large licence areas would make it easier for operators to provide a wide coverage area to serve their customers. At a minimum, Tier 3 blocks could be used, but Tier 2 blocks are still preferred. The use of Tier 4 blocks would create a much longer auction but result in a geographically fractured marketplace, thus introducing issues for all successful bidders.
52. In Saskatchewan, a Tier 2 service area would be most appropriate in allowing SaskTel to provide services to the rural areas of the province. Breaking up these rural areas into smaller tiers could allow sections of the rural population to remain unserved.
53. In our opinion no licences should be offered at Tier 1 level or any geographical level larger than Tier 2 (including package bidding). In Canada, there are several strong regional operators that provide crucial coverage in their regions. Tier 1 licenses would greatly disadvantage these operators, making it hard or even impossible for them to participate in the auction. An auction with Tier 1 licence(s) would greatly restrict the set of possible winners even before the auction starts. That would be to the great detriment of customers living in the areas served by the regional operators and in the long run would reduce overall competition in the industry.

5.4 Treatment of Existing Spectrum Users

The Department proposes that the displacement of the incumbent LPTV stations be subject to a notification period of one year for LPTV stations located in urban areas or in specific geographic areas, such as along highway corridors; and a period of two years for LPTV stations in all other areas. A displacement notification can be issued only after technical determination is made concluding that continued operation of the incumbent LPTV station would impede the deployment of new licensed systems in the 700 MHz band.

5-14. The Department seeks comments on the transition policy proposed above.

54. SaskTel agrees with the proposed transition policy for LPTV stations. Many existing LPTV operations in more isolated and remote rural areas could continue to operate for quite some time, providing a public benefit, before hindering the rollout of new wireless broadband services in the 700 MHz band.

5-15. The Department seeks comments regarding its proposal to permit low-power licensed devices, including wireless microphones, to operate in the band 698-764 MHz and 776-794 MHz only until March 31, 2012.

55. SaskTel agrees with the proposal to allow operation of low power licensed devices only until March 31, 2012.

56. SaskTel agrees with the Department's plans to prohibit the manufacture, sale, and distribution of these devices. However, SaskTel is concerned that due to the nature of these devices that there are a large number of low power devices operating in this band without licences. SaskTel is particularly concerned with low power wireless microphones, and the fact that users of these microphones may not be aware of the need to licence the device, or have not bothered to get them licenced. As these microphones wear out and are replaced, the measures put in place by the Department will ensure that replacement equipment will not operate in the 698-806 MHz band. In the interim, SaskTel is concerned that there may be a large number of these devices operating, particularly in urban areas, with the potential to create localized interference. Unfortunately, SaskTel does not have any suggested solutions.

6. Changes to Canadian Table of Frequency Allocations

6-1. The Department seeks comments on its proposed changes to the Canadian Table of Frequency Allocations for the band 698-806 MHz.

57. SaskTel agrees with the proposed changes to the Canadian Table of Frequency Allocations.

Spectrum Utilization Policy

6-2. The Department seeks comments on the spectrum utilization policy proposed above.

58. SaskTel agrees with the proposed changes to the spectrum utilization policy, and that there will be no restrictions placed by the Department on the services that can be offered by MBS licensees.

7. Promoting Competition

7.1 Possible Need to Promote Competition

7-1. The Department seeks comments on the current state of competition and its anticipated evolution, including the impact on consumers in the Canadian wireless services market:

(a) in general;

(b) in terms of its contributions and interaction to the broader Canadian telecommunications service market;

(c) in comparison with the wireless markets of other jurisdictions.

59. SaskTel strongly believes that there is adequate competition in the wireless industry in Canada. With the changes introduced by the Department in the AWS auction, the Canadian industry now includes a healthy 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.

60. This is a much expanded cast of wireless competitors compared to the situation that existed some years ago. Also, care must be taken in attempting to compare Canada with the United States – at 10 times the population; or with Europe – at a much

greater population and density. Fracturing the market by introducing more measures to incent even more startup companies will simply make all of the startups weaker.

61. 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 also being incorporated into the practices of the large players as well as the new entrants.
62. It appears, at this point, 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. 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. And these companies, especially in the West, are rolling out their networks and product offerings more slowly than other entrants. Any analysis of the state of the market should not be done until the rollout of these various new entrants is more mature.
63. In addition SaskTel notes that new entrants, who do not have access to the large network and customer bases that cable companies do, will live or die in urban areas. These startup companies will have no interest in serving rural customers for many years and measures implemented to support such startups will only introduce additional costs and externalities to companies, such as SaskTel, who are willing and indeed mandated to serve these locations.
64. SaskTel would also caution Industry Canada against the use of mechanisms which may stimulate new entrants in urban areas but will disadvantage regional operators in their requirement to expand services to rural areas. As we have indicated elsewhere, in Saskatchewan SaskTel is the primary facility-based network provider with other carriers using those facilities to provide competitive service options for our residents. Measures that stimulate competition in urban areas such as Toronto or Calgary may be very harmful to any business case which could be made in less densely populated areas. It has been our experience that new entrants in cellular tend to have no focus on rural delivery.

7-2. Provide views, and any supporting evidence, on the impacts of government measures adopted in the AWS auctions, including the impacts on consumers and on the state of competition. In particular, what has been the impact, if any, of such measures on industry concentration, barriers to entry or expansion of services, and the availability of new or improved service offerings and pricing plans?

65. The measures adopted in the AWS auction to promote competition in urban areas at this point have had limited impact on the delivery of service to rural areas. What impact they did have on rural consumers was generally negative as it drove the price of spectrum in rural areas up to extraordinary levels limiting the ability of incumbent WSPs to create a business case for expansion. Despite the increased competition for spectrum no additional competitors have used that spectrum to enter the Saskatchewan marketplace, nor are they likely to do so other than in some urban areas.

7-3. In light of the current conditions in the Canadian wireless service market(s), is there a need for specific measures in the 700 MHz and/or 2500 MHz auction to increase or sustain competition?

66. SaskTel does not believe that specific measures are required in the 700 MHz and/or 2500 MHz spectrum auctions to increase or sustain competition.

67. As noted above, the competitive market continues to develop in Canada. Market forces should be allowed to continue to operate with no additional intervention at this time.

68. Additional measures taken during the spectrum auction in terms of the auction rules and procedures to promote competition would only distort auction functioning and prices, and would be a detriment to the fair and level playing field that should be the goal of any auction process.

69. Modification of auction rules to support new competitors would have unfortunate side effects for the overall auction process. As seen in the last AWS spectrum auction, measures taken to benefit new competitors allowed those new entrants to game the system, rather than allow a fair auction of limited spectrum resources. This was seen in the last portion of the AWS auction where it appeared that some new entrants

continued to bid with impunity in areas which they knew were critical for other incumbent companies just to drive prices higher for those companies.

70. Most new competitors appear to be well financed, including in some cases considerable foreign investment support, and do not need further support from government.

71. Since the 700 MHz and 2500 MHz bands are most likely to be used for data, and since the demand for data usage is growing so rapidly, it is impossible to pre-determine the sufficient bandwidth necessary to provide high-quality service. Any measures that would artificially increase the number of winners in the auction would lead to an inefficient allocation of spectrum and fragmentation of the market. That could prevent the deployment of high speed wireless broadband with sufficient capacity to meet the growing demand. Such a decision could put all Canadians at a long-lasting disadvantage: they would get basic services from many providers but cutting-edge services and latest technology from none.

7-4. 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 these proposed changes impact your responses to the questions above?

72. A change in foreign ownership restrictions would not have any impacts on the responses given above.

73. SaskTel would further submit that while an increase in foreign ownership may increase competition in larger urban areas, thus impacting pricing and margins, this enhanced urban competition could retard investment in more rural areas and enhance the digital divide. Overall, however, it is unlikely that any foreign company entering the Canadian marketplace will construct facilities in rural areas.

74. Given the above SaskTel has recommended that foreign companies should be required, as part of entering the Canadian market to contribute to rural telecommunications development.

75. As SaskTel pointed out in its submission to Industry Canada on the digital economy:

Overall, SaskTel believes that opening telecommunications to more foreign capital may result in more competition, lower pricing and greater innovation in the urban markets of Canada. However, SaskTel believes that it is unlikely that these same foreign companies will begin to invest and compete in rural areas, causing Canada's digital divide to expand. This will mean that companies such as SaskTel, who are the providers of last resort in rural areas, will find their abilities to shoulder the burdens of serving low density areas imperiled as they are required to devote their focus and resources to competing effectively in urban areas.

76. SaskTel is not alone in this view.

77. The House Industry Committee observed that,

the goal of a business, whether Canadian or foreign-owned, is ultimately to maximize profit, not to achieve a given societal objective. From this perspective, there is not much difference between a Canadian telecommunications company and a foreign-owned one; neither will invest in a project for the sole purpose of providing services to rural and remote areas if the project is not commercially viable. Only government policy could ensure that such investments are undertaken.³

78. Bell Canada voiced a similar sentiment in its submission to the digital economy consultations stating,

[a]nother unintended consequence could result from foreign competitors' targeting of urban areas to the exclusion of rural areas. This is likely as higher urban population densities provide better opportunities to maximize investment returns. ... The focus on urban areas by foreign-owned competitors will require Canadian competitors to dedicate their scarce investment capital to fortify their urban capabilities. As a consequence, investments in rural areas will suffer.⁴

³ Report of the Standing Committee on Industry, Science and Technology, *Canada's Foreign Ownership Rules and Regulations in the Telecommunications Sector*, June 2010, Chapter 3.

⁴ Bell Canada Submission to the *Government of Canada Digital Economy Strategy Consultation*, 9 July 2010, paragraph 34.

Foreign ownership changes must be implemented in a way that rural interests are protected, and the best protection is a safeguard like the National Contribution Fund. ...

79. A National Contribution Fund is the only way to incent investment and competition in rural and northern areas and the provision of affordable, advanced services in rural areas. The current National Contribution Fund could be augmented by using the funds gained in the 700 MHz auction to support broadband in rural areas.

7.2 Specific Mechanisms Applicable to the 700 MHz and 2500 MHz Auctions

7-5. If the Department determines that there is a need for measures to promote competition, which of the above mechanisms would be most appropriate and why should this mechanism be considered over the other? Comments should also indicate if further restrictions should apply so that policy objectives are met, for example, over a given time period?

80. SaskTel does not believe that any of the proposed measures are appropriate for the wireless industry at this time. There is an exploding demand for increased data from our customers, fuelled in particular by the rapid rise in the number of smartphones being used, and the fact that the smartphone users are using higher and higher amounts of data for new applications. Operators such as SaskTel are right now very hard pressed to provide enough network capacity to meet this increasing bandwidth demand, and meeting this demand will be impossible without access to additional spectrum. SaskTel's expanding capacity needs are outlined in Annex 1.

81. SaskTel has a mandate to provide telecommunications services, including wireless broadband services, to all of the people of Saskatchewan. Measures taken to artificially increase the number of competitors will not benefit the people of Saskatchewan since, apart from the potential entry of the cable companies, the new competitors have shown and will show no interest in directly serving even the urban residents of Saskatchewan. Even the cable companies, should they enter the Saskatchewan market will focus on the urban portion of the marketplace. New competitors will look to SaskTel and other incumbent operators for roaming agreements in Saskatchewan. In fact, the traffic from the new competitors roaming on the SaskTel network will further increase the demands on our network.

82. SaskTel needs access to additional spectrum to meet the forecasted data demands from the increasing numbers of smartphone users. In particular, SaskTel needs access to 700 MHz spectrum in order to serve rural customers and to provide even more robust coverage in all corners of urban areas (inside buildings and the like). The business case for serving rural customers with any wireless service is weak to say the least. The high costs to serve these areas could easily more than double if additional 700 MHz spectrum is not available for use by SaskTel, and we are forced to utilize our other higher frequency spectrum holdings. Using higher frequency spectrums will mean that SaskTel would be required to build significantly more towers with fibre optic connections to provide adequate coverage in rural areas. SaskTel already has in excess of 300 towers in rural Saskatchewan and has plans to build significantly more even with access to 700 MHz spectrum. Without that access, costs for rural coverage could become exorbitant. Any measures such as spectrum caps or set asides that directly hinder SaskTel's access to additional spectrum, in particular 700 MHz spectrum, will only hinder SaskTel's ability to serve rural Saskatchewan. Being the only service provider with substantive facilities serving rural Saskatchewan, SaskTel's network will also have to carry roaming traffic from a large number of other network service providers, further adding to the capacity strains on our network. Therefore, any spectrum caps or set asides will not only harm SaskTel, they will harm all of the other service providers and competitors who have chosen to roam on our network, or to enter into network sharing agreements with SaskTel, rather than build a costly network to serve rural Saskatchewan.

In light of your response above, and recognizing that pending decisions on the specific band plan, spectrum for public safety system, tier sizes and open access requirements could influence your response:

7-6. (a) If the Department were to implement spectrum aggregation limits (caps):

- (i) Should the cap apply to the 700 MHz band only or be broader?***
- (ii) What should the size of the cap be?***
- (iii) Should bidders and their affiliates or associates share the cap?***
- (iv) How long should the cap remain in effect?***

(b) If the Department were to implement a set-aside in the 700 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 they 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 spectrum be restricted for a given time period)?

83. SaskTel strongly believes that spectrum caps and set asides are not required in the industry at this time, and will only be a detriment to the wireless industry. In particular in Saskatchewan, the majority of the new competitors will be choosing to enter roaming agreements to serve Saskatchewan. To date, none of the new competitors have shown any interest in building network infrastructure to serve even urban Saskatchewan, let alone rural Saskatchewan. With the combination of traffic from SaskTel customers, as well as traffic from competitors using our local network infrastructure, it becomes even more vital for SaskTel to have access to sufficient spectrum to meet the explosive growth in required network capacity. Should these measures be implemented, it would be ironic that any spectrum caps or set asides imposed on SaskTel will result in network congestion and poor service for not only SaskTel's customers, but those of the new competitors.

84. If a cap is applied, it should only be applied to those licensees who have spectrum, but have not deployed and operated a network using their spectrum in that geographic area.

7-7. Are there other mechanisms that should be considered and, if so, how should these be applied?

85. No, no other mechanisms should be considered.

7-8. 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?

86. Adoption of new foreign ownership rules would not change any of SaskTel's responses to the above.

8. Promoting Service Deployment in Rural Areas

8-1. In the above context, the Department seeks comments on challenges and specific problems affecting the deployment of broadband mobile services to low-density rural and remote areas.

87. SaskTel is focused on providing high quality telecommunications services, including wireless services, to all residents of Saskatchewan, both urban and rural. However, we are finding the business case to support these rural deployments is becoming more and more challenging.

88. Access to broadband services is essential for not only rural businesses, but also for education, and social interaction. It is becoming more challenging to meet the broadband needs of our rural customers, who are expecting similar data speeds to urban customers. In addition, the existing copper infrastructure limits landline data speeds available to rural customers, causing these customers to look more and more towards wireless to meet their broadband data requirements.

89. The low population density in Saskatchewan limits the business case for rural broadband deployments. The only viable solution to improve the business case is to reduce the cost of network infrastructure deployments. SaskTel has made every effort to reduce network costs, but increases such as those in costs for land, steel for towers, and the costs of new equipment required to keep pace with wireless technology evolutions are all beyond the control of SaskTel.

90. In the opinion of SaskTel, the key to improving the extent of deployment of mobile broadband services to low density rural and remote areas is to reduce the costs of these deployments. Many costs are beyond the control of either SaskTel or the Department. However, one major cost element for which Industry Canada does have

control is the cost of spectrum suitable for rural deployments such as 700 MHz, the cost of which becomes part of the deployment cost. SaskTel suggests that Industry Canada could most effectively impact the cost of rural deployment by creating rules which stimulate companies to expand or to serve rural residents. SaskTel suggests that this can be done in two ways. First, by ensuring that companies actually deploy the spectrum they purchase and secondly, by ensuring (at least for licensees in the Upper C Block) that rural residents are included in that deployment requirement. Such an approach would greatly increase the probability that rural residents would actually benefit from this spectrum being allocated for commercial use.

8-2. Is there a need for further regulatory measures or changes to existing regulatory rules (e.g. RP-19) to facilitate service deployments in rural and remote areas that remain unserved and/or underserved?

91. Although the measures incorporated in RP-019 serve some good, even under these measures, only larger 'rural' communities have been targeted by the new cellular entrants. The same challenges exist to serve deep rural customers located outside of larger communities. Serving the large community doesn't provide service to deep rural customers living outside the community, who often have a greater need for mobile wireless services than those living within the large community.

8-3. Should the Department decide that measures are necessary, comments are sought on specific measures that could be adopted within the 700 MHz spectrum auction process to ensure further deployment of advanced mobile services in rural and remote areas (e.g. roll-out conditions, tier structure, etc.).

92. SaskTel strongly believes that the 700 MHz spectrum is the most suitable spectrum alternative to economically serve rural areas. As has been noted previously, the business case for rural wireless broadband deployments is challenging. This case can be helped by incorporating some incentives for rural deployment into the 700 MHz auction rules and licence conditions.

93. SaskTel proposes that strict implementation conditions be imposed on the Upper C block of 700 MHz spectrum that would promote timely rural deployments, and that these conditions be clearly defined prior to the spectrum auction. This would provide the opportunity for operators that are serious about rural deployments to bid on this spectrum block, and will separate the rural focused operators from those service

providers purely focused on urban markets, who can still bid on other spectrum blocks. This intervention, limited to a single block, would allow Industry Canada to promote build-out in rural areas without affecting the rest of the auction.

94. SaskTel suggests that a very strict implementation condition to provide service to at least 90% of the population in the licence area within five years be imposed on the Upper C block of spectrum (746-757 MHz paired with 776-787 MHz). Bidders on the Upper C block would have to accept this condition for rural deployment, or bid on other 700 MHz spectrum blocks. In order to further enforce this rural deployment, the Department could word the conditions such that only interim conditional authority would be granted to the operator until the deployment condition is met, upon which the spectrum licence would be formally issued. This would make it easier for the Department to enforce this rollout condition by adding the risk to the operator of losing their operating authority, thus providing incentive for the operator to complete their rural deployment. The operator can deploy in more profitable urban areas, as long as the rural deployment requirements are met within 5 years. Spectrum auction bidders unwilling to adhere to these conditions can simply bid on other spectrum blocks in the auction.

95. As mentioned before, the 700 MHz band is the most suitable spectrum alternative that can provide economic deployment of mobile broadband services in rural areas. Wireless broadband services will not be deployed in rural areas unless costs are reduced, and one cost which is controllable by Industry Canada is the cost of spectrum. Rural deployments will not occur if the 700 MHz spectrum blocks are acquired by licensees and then only deployed in urban areas.

9. Open Access

9-1 The Department seeks comments on whether there is a need for government intervention to promote open access, by increasing access by users to handsets and/or applications.

9-2. If government intervention is needed, which of the following options should be implemented?

Option 1: Mandated open access requirements across all future commercial mobile bands

Option 2: Mandated open access requirements for the entire commercial mobile spectrum in the 700 MHz band.

Option 3: Mandated open access requirements for the “C Block” (746-757/776-787 MHz) as in the United States.

Please provide supporting arguments for your responses, and any additional comments related to provisions of open platforms for devices and applications.

96. SaskTel does not believe that government intervention is necessary to mandate open access devices, and open access platforms. The highly competitive mobile broadband industry is moving in that direction already, and market forces should be allowed to further dictate this movement. There are sufficient competitive forces in the market place already driving vendors and operators towards open access for platforms and devices.

10. Auction Timing

10-1. The Department is considering three options to proceed with the 700 MHz and 2500 MHz bands auction processes:

Option 1: to conduct an auction for licences in the 700 MHz band first, followed by an auction for licences in the 2500 MHz band approximately one year later;

Option 2: to conduct an auction for licences in the 2500 MHz band first, followed by an auction for licences in the 700 MHz band approximately one year later;

Option 3: to conduct one combined auction for licences in both the 700 MHz and 2500 MHz bands, which would be six months later than the first auction in the case of separate auctions.

Industry Canada is seeking views on the merits or disadvantages of proceeding with each of the various options stated above. The Department seeks to understand the magnitude of interdependencies between the two bands from a business/operational perspective. Specifically, comments are sought as to the extent spectrum in these bands is interchangeable or complementary from both a technological and a strategic perspective. In addition, views on the business and financial capabilities of participating in a joint auction for both bands are sought. Comments should include the rationale for selecting one option rather than another.

97. SaskTel believes that Option 3 would be in the best interest of consumers and the wireless industry in Canada. Having one combined auction would allow the best opportunity for market forces to dictate the outcome of the spectrum auction, and

ensure the most efficient outcome. It would also allow the best opportunity for all participants to acquire spectrum suitable for their business needs and be able to compete to serve consumers. One combined auction will also reduce the administrative costs of running the spectrum auction by having one auction instead of two. The time and costs for auction bidders to participate in the auction will also be reduced with one auction, as opposed to two.

98. In addition, the trend in other jurisdictions is to combine available mobile broadband spectrum from different bands into one auction. The recent spectrum auction in Germany featured spectrum in the 800 MHz, 1.8 GHz, 2.0 GHz, and 2.6 GHz bands. The upcoming auction in Spain will feature 310 MHz of spectrum also being auctioned off in four different bands. The upcoming auction in Switzerland will feature 580 MHz of spectrum auctioned off in six different bands.

11. Next Steps

99. SaskTel notes the future consultation on auction rules and policies. SaskTel is willing to participate in any future consultations on the policy and licensing of this spectrum.

CONCLUSION

100. SaskTel is pleased to have had the opportunity to provide comments to the 700 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, while protecting incumbent users such as SaskTel providing essential wireless broadband services primarily in rural areas of Saskatchewan.

101. 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 700 MHz spectrum developed to the maximum benefit of all Canadians.