



INDUSTRY 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 LICENCE SPECTRUM IN THE BAND 2500-2690 MHz**

REPLY COMMENTS OF SHAW COMMUNICATIONS INC.

MAY 16, 2011

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A. Introduction and Executive Summary

1. Shaw is pleased to submit these reply comments in response to Part B of Industry Canada's *Decisions on a Band Plan for Broadband Radio Service (BRS) and Consultation on a Policy and Technical Framework to Licence Spectrum in the Band 2500-2690 MHz*, SMSE-005-11, dated February 10, 2011 (the "Consultation Document").¹
2. In the reply comments that follow, Shaw addresses the central issues that have been raised by the Department and interested parties in this Consultation, including the appropriate block sizes to be established for spectrum in the 2500 MHz band, geographic licensing areas for 2500 MHz spectrum, mechanisms to promote competition, and service deployment in rural and underserved areas. In addition, Shaw discusses the appropriateness of holding a combined auction of 700 and 2500 MHz spectrum in light of attempts by some parties to reargue this issue in the context of this proceeding.
3. Shaw continues to be of the view that uniform block sizes of 10+10 MHz for the FDD portion of the 2500 MHz band and uniform block sizes of 20 MHz for the TDD portion of the 2500 MHz band best achieve the objective of maximizing bidding opportunities in the 2500 MHz auction, while at the same time ensuring that service providers can build spectrally efficient broadband networks. There appears to be considerable support for Shaw's block size proposal among many of the parties that have submitted comments in this proceeding.
4. Furthermore, as Shaw and other parties have noted in this Consultation and in the 700 MHz Consultation,² equitable access to spectrum is a pre-condition for a competitive wireless market, and a competitive wireless market is essential for consumers to be able

¹ Industry Canada, *Decisions on a Band Plan for Broadband Radio Service (BRS) and Consultation on a Policy and Technical Framework to Licence Spectrum in the Band 2500-2690 MHz*, SMSE-005-11, February 10, 2011 (the "Consultation Document").

² Industry Canada, *Consultation on a Policy and Technical Framework for the 700 MHz Band and Aspects Related to Commercial Mobile Spectrum*, SMSE-018-10, November 2010 (the "700 MHz Consultation").

- to experience the full potential of the emerging new mobile wireless market, including increased customer choice, greater supplier responsiveness, pricing discipline and product and service innovation.
5. In order to promote equitable access to spectrum in the 2500 MHz band, Shaw proposes an in-band cap of 40 MHz which would apply to all spectrum in the band, regardless of whether it is held in the TDD or FDD portions of the band or in a combination of the two. In reviewing the comments of other parties to this proceeding, there appears to be a considerable amount of support for an in-band cap mechanism that is either identical, or very similar, to Shaw's proposal.
 6. An in-band cap mechanism is an effective, yet light-handed, mechanism to ensure that all carriers have a reasonable opportunity to take advantage of the potential associated with the 2500 MHz band's global designation and to reduce the current concentration of 2500 MHz spectrum in the hands of Bell and Rogers, through their Inukshuk joint venture, and SaskTel (the "BRS Incumbents"). It is clear from the comments of Shaw and several other parties that there is no credible policy rationale to permit the BRS Incumbents to acquire more spectrum in the 2500 MHz band; indeed, to do so would preclude any chance for an equitable allocation of spectrum in the band.
 7. Just as the 700 MHz auction offers the Department a unique opportunity to level the playing field in terms of access to low frequency spectrum, the 2500 MHz auction offers the Department the chance to ensure fair access to this particular band, and its global potential, and to spectrum generally. Shaw's cap proposal provides the Department with the means to level the playing field. At the same time, as several parties have noted, in-band caps such as Shaw's have minimal impact on auction dynamics and will not compromise the efficient deployment of this spectrum.
 8. With respect to tier sizes, Shaw continues to support the adoption of uniform Tier 2 service areas to maximize network deployment efficiencies and allow competitors to

create spectrum footprints that are comparable to those of the BRS Incumbents who already hold (MCS) spectrum licences in the band on a Tier 2 basis.

9. Because of its propagation characteristics and the current state of development of the device ecosystem in the 2500 MHz band, Shaw believes that the 2500 MHz band is not suitable for firm roll-out obligations. However, the band would be appropriate for service roll-out targets, similar to the targets that were applied by the Department to AWS licensees.³
10. With respect to the insinuation in certain submissions that new entrants only need spectrum in the 2500 MHz band (as opposed to the 700 MHz band), the evidence on the record of the 700 MHz Consultation clearly contradicts this argument and demonstrates that new entrants such as Shaw are interested in acquiring spectrum in the 700 MHz band in order to achieve greater spectral diversity and to expand their service footprints to rural areas.
11. As to the argument that holding a combined auction somehow eliminates the need for auction mechanisms, such as spectrum caps, that are designed to promote competition in the band, Shaw points out that the incumbents' own evidence in this proceeding and the 700 MHz Consultation demonstrates very clearly that spectrum in the 700 MHz band is very different than spectrum in the 2500 MHz band and that the two bands cannot simply be slapped together as a "package" for the purposes of determining whether spectrum caps or other mechanisms should be applied in the auction. Different considerations apply to each band of spectrum. Therefore, appropriate auction mechanisms should be designed with due regard for the unique policy considerations related to each type of spectrum and the concentration of holdings of certain types of spectrum. A spectrum cap in the 700 MHz auction is appropriate because new entrants currently have no low-frequency spectrum. A spectrum cap in the 2500 MHz auction is

³ Industry Canada, *Licensing Framework for the Auction for Spectrum Licences for Advanced Wireless Services and other Spectrum in the 2 GHz Range*, December 2007, Appendix A ("AWS Licensing Framework").

also appropriate because, notwithstanding the relatively large amount of spectrum available in the band, it is already highly concentrated in the hands of the BRS Incumbents and it is essential that all carriers have a reasonable opportunity to take advantage of the band's global potential.

12. As was the case in the 700 MHz Consultation, the incumbents that argue against cap mechanisms in the 2500 MHz auction have missed the key point – what consumers want and need. Consumers want choice, innovation and service and price competition. In order to continue competing in the constantly evolving mobile services market, new entrants require additional spectrum in diverse bands. It is therefore critical that spectrum caps, such as those proposed by Shaw, are implemented to ensure that incumbents are unable to act on their incentive to foreclose competitor access to these two spectrum bands.
13. Finally, as in the 700 MHz Consultation, most parties to this proceeding agree with Shaw's view that the issue of relaxing the foreign ownership rules is not relevant to the issue of whether measures are needed to promote equitable access to 2500 MHz spectrum.
14. Although Shaw has attempted in these reply comments to address each of the critical issues and arguments raised by interested parties in this Consultation, any failure on the part of Shaw to address a specific issue or argument should not be construed as agreement with or acceptance of such issue or argument.

B. Block Sizes – Maximizing Efficiencies and Bidding Opportunities

15. Many parties submitted comments in this Consultation that proposed block sizes of 10+10 MHz or greater in the FDD portion of the band and 10 MHz or greater in the TDD portion of the band. These parties include MTS Allstream, Eastlink, Research in Motion ("RIM"), Shaw, Barrett, Quebecor, Public Mobile and the Electro-Federation of Canada

(EFC) which expressed its position on this issue via the Radio Advisory Board of Canada ("RABC").⁴

16. The only parties that proposed smaller block sizes were certain wireless incumbents (in this case, Bell, Rogers, Telus and SaskTel) and the RABC. These parties argued in favour of 5+5 MHz blocks of spectrum in the FDD portion of the band and 5 to 10 MHz blocks in the TDD portion of the band.
17. As Shaw noted in its initial comments in this proceeding, the Department's decision on block sizes requires a balancing of two objectives, namely (i) maximizing technical and operational efficiencies through wider channels; and (ii) creating the optimal number of bidding opportunities in the auction in order to ensure sustainable competition in the market.
18. If the Department creates block sizes that are too small as recommended by the wireless incumbents, new entrants may be left with insufficient channel widths in order to provide competitive services in the band. Competition is not necessarily best served by creating as many small blocks as possible, because new entrants require minimum channel widths, consistent with Shaw's proposal, to compete with the incumbents on a level playing field.
19. Thus, the Department needs to establish block sizes in the 2500 MHz band that are neither too small nor too large. Given the relatively large amounts of spectrum available for auction in the 2500 MHz band, the Department should refrain from splitting up the band in a way that will result in inefficient fragmentation of the band which seems to be the purpose of the Bell, Rogers and Telus proposals. At the same time, the Department should not adopt blocks that are too large, as this would

⁴ See RABC 2500 MHz Comments, April 19 2011, p. 2.

“withhold from market players the necessary flexibility during the auction process to assemble the frequency blocks that best satisfy their own specific needs.”⁵

20. Although the wireless incumbents propose that “fragmentation” concerns be addressed by allowing parties to voluntarily swap slivers of spectrum once the auction is over, this is a purely voluntary mechanism, which means that the incumbents can, and likely would, refuse swap requests by new entrants who are seeking to create larger blocks of contiguous spectrum.
21. In the view of Shaw, it would be imprudent to adopt auction rules that will allow the incumbents to frustrate the ability of new entrants to acquire contiguous blocks of spectrum.
22. The fact is that the BRS Incumbents already have a sufficient amount of spectrum in the band. The Department should therefore focus on designing a framework for the 2500 MHz auction which allows those parties that do not currently hold spectrum in the band to obtain sufficiently large blocks of spectrum in the band so as to be able to offer competitive broadband wireless services, while at the same time ensuring that the blocks are not so large as to limit the overall number of potential bidders in a given area.
23. This is why so many parties to this proceeding have recommended block sizes of 10+10 MHz in the FDD portion of the band and 10 to 20 MHz in the TDD portion of the band. In fact, RIM notes in its comments that, based on its review of global precedents in the 2500 MHz band, “of those licensed or pending, close to 75% of the blocks are 15+15 MHz or larger and 67% were 20+20 MHz or larger.”⁶
24. Although RIM goes on to recommend that at least one block of significant size, such as 30+30 MHz, be made available in order to ensure “a class-leading high-speed and high capacity network”,⁷ this proposal goes too far as it ignores the fact that there is already

⁵ Quebecor 2500 MHz Comments, April 19, 2011, para. 13.

⁶ RIM 2500 MHz Comments, April 29, 2011, para. 10.

⁷ *Ibid*, paras. 11 and 12.

one party that holds more than 30+30 MHz in the band on a cross-Canada basis (i.e., Inukshuk). If the Department were to adopt RIM's proposal, this would result, among other things, in two carriers holding all available spectrum in the most populated areas of the country (i.e., Region B). As Bell has observed, the 2500 MHz band is ideal for deployment in densely populated areas. It is therefore critical that new entrants have equitable access to this spectrum.

25. Shaw notes that many of the arguments relating to block size contained in the RABC's submission support larger block sizes and, in this respect, they are fully consistent with the position of Shaw and others who support block sizes of at least 10 MHz in the FDD portion of the band. For example, the RABC notes that "the technology trend is towards larger bandwidths to support efficient delivery of broadband services to the end-user" and that "cost efficiency factors into deployment when licensed geographic tiering is overly fragmented and spectrum blocks are non-contiguous".⁸ The RABC also notes that the 2500 MHz band "is the largest band of contiguous spectrum and therefore the perfect opportunity to provide for larger bandwidths."⁹ The RABC even goes so far as to say that "[i]n this regard we note that several administrators have allocated minimum block sizes of 10+10 MHz or larger".¹⁰
26. Shaw agrees with the numerous arguments contained in the RABC's submission which support larger block sizes. However, Shaw does not agree with the RABC's recommendation for FDD spectrum blocks of 5+5 MHz and TDD spectrum blocks of 10 MHz. Shaw believes that the rationale provided by the RABC in support of its block size recommendation actually contradicts this recommendation and instead provides support for the block size recommendations of Shaw and others.
27. Shaw also agrees with the Department's own observations in the Consultation Document that LTE and WiMAX "will deliver greater efficiencies when operating with

⁸ RABC 2500 MHz Comments, April 19, 2011, paras 3.2 and 3.4.

⁹ *Ibid*, para. 3.5.

¹⁰ *Ibid*, para. 3.6.

wider channels of 20 MHz or more” and that the “need to licence relatively wide contiguous blocks of spectrum is underscored in an environment where globally harmonized mobile spectrum is scarce.”

28. Based on the foregoing, Shaw continues to support the use of uniform block sizes of 10+10 MHz in the FDD portion of the band and 20 MHz in the TDD portion of the band. Shaw also submits that there is no need to adopt different block sizes for the different geographic regions identified in Appendix A of the Consultation Document as this would result in inconsistent channel widths for companies seeking to develop a uniform network footprint across different geographic regions.

D. Tier 2 is the Most Efficient Choice for 2500 MHz Licences

29. In its initial comments in this proceeding, Shaw recommended that the Department use uniform Tier 2 serving areas for all blocks of spectrum that are made available in the 2500 MHz auction in order to maximize network deployment efficiencies and allow competitors to create spectrum “footprints” that are equivalent to those enjoyed by the BRS Incumbents in the band.
30. Many of the parties in this proceeding support Tier 2 licence areas or a mix of Tier 2 and Tier 3 licences in certain areas in order to reflect the fact that some spectrum blocks in British Columbia and Ontario will only be available on a Tier 3 basis.
31. As noted by the Department in the Consultation Document, significant efficiencies can be achieved in licensing spectrum on a larger geographic area. Moreover, given the capital and operational costs that are involved in provisioning broadband mobile services, it is easier to recover these costs when there is a larger addressable subscriber base over which the costs can be spread.
32. There are also distinct technical advantages to the use of larger tier sizes because they involve less coordination between licensees and more effective use of radio spectrum.

None of the parties that submitted comments in this proceeding, including those favouring smaller tier sizes, refuted this point.

33. Furthermore, as Shaw noted in its initial comments in this proceeding, all of the MCS spectrum that was licensed by the Department to Inukshuk was awarded on a province-by-province and territory-by-territory basis. In the view of Shaw, competitors should be given the opportunity to establish network service footprints in the 2500 MHz band that are similar to those of the BRS Incumbents. In order to do so, they will require access to spectrum blocks that are based on Tier 2 serving areas.
34. Shaw therefore rejects the recommendations of the BRS Incumbents that the Department adopt Tier 3 licences exclusively for the 2500 MHz spectrum that will be made available in the auction. As indicated above, there are distinct technical and operational advantages in adopting larger tier sizes; plus, only Tier 2 licences replicate the footprint of the MCS licences that are currently held by Inukshuk.
35. With respect to the proposal by Barrett that the Department adopt unbundled Tier 4 serving areas for spectrum in the 2500 MHz band, Shaw agrees with the comments of other parties to this proceeding, such as Quebecor, who have observed that Tier 4 and even Tier 3 licences would fragment 2500 MHz spectrum geographically and “endanger the ability of the acquiring operators to assemble the contiguous frequency blocks they will need to be able to offer an acceptable level of service to their customers spread across extended geographic areas.”¹¹
36. As to Barrett’s unbundling proposal, Shaw notes that this proposal was also included in Barrett’s comments in the 700 MHz Consultation.¹² Although Barrett claims that this proposal is equally valid in the case of 2500 MHz spectrum, it bears noting that the Department recently issued *Decisions on the Revisions to the Framework for Spectrum Auctions in Canada and Other Related Issues* in which it determined that it would

¹¹ Quebecor 2500 MHz Comments, April 19, 2011, para. 21.

¹² Barrett 700 MHz Comments, February 28, 2011, paras. 100-110.

maintain its existing geographic licensing areas for spectrum auction purposes.¹³ In making this decision, the Department specifically considered the issue of whether rural areas should be unbundled from urban areas for licensing purposes and decided against this approach because of the coordination complexity associated with the proposal. According to the Department, “[T]he creation of urban versus rural areas could increase coordination complexity, which may reduce the overall social and economic benefits.”¹⁴

37. While Barrett argues that the use of Tier 2 and Tier 3 licences forces urban-focused carriers “to obtain large swathes of rural spectrum along with their urban spectrum, irrespective as to whether they ever intend to use it”¹⁵ Barrett ignores the fact that these carriers can and would be incented to lease or sub-divide their spectrum licences if, as Barrett claims, they did not want to deploy service in rural areas.

38. In fact, the Department made this very observation in its Decisions on Canada’s Spectrum Auction Framework when it noted that several viable options for companies wishing to acquire spectrum in rural or remote areas are already available, including the transfer, subdivision or subordinate licensing of spectrum.¹⁶

E. Shaw’s Light-Handed Cap Mechanism Ensures Equitable Access to 2500 MHz Spectrum

39. In its initial comments in this proceeding, Shaw proposed a spectrum cap mechanism of 40 MHz which would apply to all spectrum in the band, regardless of whether it is held in the TDD or FDD portions of the band or in a combination of the two. The cap would apply to all existing and prospective holders of 2500 MHz spectrum in a given licence area which means that if a party currently exceeds the cap in a given area, it would not be permitted to bid on spectrum in that area in the auction. At the same time,

¹³ See Industry Canada, *Decisions on the Revisions to the Framework for Spectrum Auctions in Canada and Other Related Issues*, March 2011, page 10 (“Decisions on Canada’s Spectrum Auction Framework”). See also Industry Canada, *Framework for Spectrum Auctions in Canada*, March 2011, Issue 3, at page 3.

¹⁴ Industry Canada, *Decisions on Canada’s Spectrum Auction Framework*, page 10.

¹⁵ Barrett 2500 MHz Comments, April 19, 2011, para. 80.

¹⁶ Industry Canada, *Decisions on Canada’s Spectrum Auction Framework*, *supra*, pp. 10-11.

however, Shaw is not proposing that the BRS Incumbents that currently exceed the cap be required to return any of their existing holdings in the band.

40. There is considerable support from parties in this proceeding for an in-band spectrum cap mechanism in the 2500 MHz band. These parties include Quebecor, MTS Allstream, Eastlink, Barrett and SSI Micro. Even Telus, which has been bitterly opposed to measures to promote competition in other contexts, explicitly supports a “de facto set-aside” of spectrum for new entrants in the 2500 MHz band consisting of the spectrum that the BRS Incumbents were required to give back. Telus also does not appear to object to a spectrum cap, provided that certain conditions are met.
41. As for SaskTel, it is no accident that this incumbent takes the position that if the Department decides to adopt measures to promote competition in the 2500 MHz band, then those measures should take the form of a spectrum set-aside. The problem with this approach is that it will not address instances where one or more parties already holds an excessive concentration of spectrum in the band and should therefore be prevented from acquiring even more.
42. In the view of Shaw, neither SaskTel nor any of the other BRS Incumbents (i.e., Bell, Rogers and InukShuk) require any additional spectrum in order to provide next generation services in this band notwithstanding their claims to the contrary. Indeed, according to the British consulting firm, DotEcon Ltd., a WiMAX carrier likely needs no more than 50 MHz of spectrum in the 2500 MHz band and an LTE carrier is unlikely to need any more than 20+20 MHz in the 2500 MHz band.¹⁷
43. The BRS Incumbents have a minimum of 60 MHz of spectrum in every single region of the country and, in the case of Canada’s most populous regions, an astounding 120 MHz of spectrum. This far exceeds the amount of spectrum that DotEcon and even Telus believe is needed to provide broadband services in the band. Shaw therefore agrees

¹⁷ DotEcon Ltd., as cited in Quebecor’s 2500 MHz Comments, April 19, 2011, para. 43.

with Quebecor that “any operator that already has... a full 20+20 MHz of BRS spectrum in any geographic service area will have a substantial holding with which to pursue its reasonable business objectives.”¹⁸

44. Even if it were true that the BRS Incumbents needed additional spectrum (a matter which Shaw does not concede), the spectrum requirements of the BRS Incumbents must be balanced against those of other service providers who have no 2500 MHz spectrum at all, let alone the 120 MHz of spectrum held by Inukshuk. The record of the 700 MHz Consultation makes it clear that all carriers will need more spectrum as the new mobile wireless market emerges, not just the incumbents.
45. Shaw therefore remains of the view that its proposed in-band spectrum cap is an effective yet light-handed measure which will ensure that all carriers have equitable access to spectrum in the 2500 MHz band.
46. The merits of an in-band spectrum cap mechanism, such as the one proposed by Shaw, were highlighted in a report prepared by QSI Consulting which was submitted by Shaw in the 700 MHz Consultation. As noted in that Report, the use of in-band caps does not raise the same concerns as “other policy levers, such as aggregate spectrum caps and spectrum set-asides” because of the cap’s minimal impact.¹⁹ In addition, an auction cap does not raise the same types of “gaming opportunities” that are raised by spectrum set-asides.²⁰
47. Furthermore, the cap proposed by Shaw allows carriers to acquire sufficient contiguous channel widths to provide competitive services. As was the case with Shaw’s 700 MHz cap proposal, Shaw’s proposal for the 2500 MHz band balances the individual needs of all carriers with the policy objective of promoting sustainable competition in the band.

¹⁸ Quebecor 2500 MHz Comments, para. 42.

¹⁹ See QSI Consulting, Inc., *In-Band Auction Cap: Promoting Sustainable Competition in the Canadian Mobile Wireless Industry Through an Equitable Auction Design*, which is set out in the Attachment to Shaw’s Reply Comments in the 700 MHz Consultation, April 6, 2011, p. 12.

²⁰ *Ibid*, p. 12.

48. At the same time, the mechanism focuses on the most relevant criterion for overcoming a critical barrier to entry for new entrants in the market, namely the new entrants' relatively low level of spectral holdings and their lack of spectral diversity. Shaw therefore urges the Department to adopt an in-band spectrum cap in the 2500 MHz band of 40 MHz of spectrum.

F. New Entrants Require Equitable Access to Both 2500 MHz Spectrum and 700 MHz Spectrum

49. Bell argued in its submission that there should be a combined auction of 700 and 2500 MHz spectrum in order to allow the market to assess the substitutability of these two bands of spectrum:

The Department must not lose sight of the fact that 2500 MHz spectrum, of which there is considerably more available than 700 MHz spectrum, is very suitable to the needs of carriers whose operations have a greater focus on urban/regional markets. If there is a joint 700 MHz and 2500 MHz auction, there will be a substantial amount of spectrum available for auction, ranging from 110 MHz up to 170 MHz in some areas. With two spectrum bands and this amount of spectrum available, all parties should be allowed to bid in an open auction. This allows the market to determine the appropriate substitutability between 700 MHz and 2500 MHz spectrum and network operators to focus their efforts in order to obtain the appropriate mix of spectrum holdings given the business model that they are trying to implement (i.e. national versus urban/regional).²¹

50. In making this argument, Bell points out that there are very different capabilities associated with the spectrum in these two bands.

There are aspects of 700 MHz and 2500 MHz spectrum that indicate that 2500 MHz spectrum is a very effective option in more densely populated areas. For example, 700 MHz spectrum has large coverage areas which creates interference problems if towers are required to be placed close together in order to create additional capacity to support demand in that area. In those markets where capacity is limited, 2500 MHz radios can be added to existing sites rather than requiring additional sites to be built. Thus, in terms of increasing capacity Bell Mobility notes that in markets with larger subscriber density (e.g. greater than 5 subscribers per square kilometre), 2500 MHz spectrum is more effective than 700 MHz.²²

²¹ Bell 2500 MHz Comments, April 19, 2011, para. 12.

²² *Ibid*, para. 11.

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51. While Shaw does not disagree with the fact that 2500 MHz spectrum is very different than spectrum in the 700 MHz band, it fundamentally disagrees with the assertion that combining the two bands for purposes of one auction would support the rationale for an open auction. In Shaw's view, the distinctions between these bands support the opposite conclusion, namely that appropriate caps applicable to each band are essential to promote equitable access to each band.
52. As the evidence on the record of this Consultation and the 700 MHz Consultation clearly demonstrate, spectrum in the 700 MHz band is not substitutable with spectrum in the 2500 MHz band. The 700 MHz band has completely different propagation characteristics than spectrum in the 2500 MHz band and each band is suited to particular settings and applications. In fact, the report that Bell filed in this proceeding from the Communications Research Centre ("CRC") demonstrates quite clearly that high and low frequency bands are very different. As noted in the CRC Report, "the lower path loss at 700 MHz offers the potential for increased coverage area per base station," which means that "fewer base stations would be required at 700 MHz than at 2,500 MHz."²³
53. Bell's arguments also ignore the accepted fact that the penetration characteristics of 700 MHz spectrum make it highly valuable in urban settings as well.
54. At the same time, the 2500 MHz band is the only band to have been designated by the ITU for deployment of next-generation mobile services on a global basis. As Telus notes in its Comments in this proceeding,

...the 2500 MHz band has become more important than was ever anticipated in 2006 due to the rapid adoption of mobile broadband service and the alignment of this band to international standards. Unlike 700 MHz, 850 MHz, PCS or AWS spectrum, 2500 MHz is the only band that is harmonized between Canada and

²³ Please see Appendix 3, p. iii of Bell Canada's 2500 MHz Comments, April 19, 2011, which contains a report prepared by Communications Research Centre Canada, entitled *Comparison of Radio Propagation Characteristics at 700 and 2,500 MHz Pertaining to Macrocellular Coverage*, April 2011 (the "CRC Report").

Europe (as well as other jurisdictions) and operators in Europe have already deployed LTE over 2500 MHz spectrum.²⁴

55. A similar observation was made by other parties to this proceeding, including Quebecor, which noted that “the 2.5 GHz band is particularly attractive to mobile operators due to its global designation for the deployment of IMT-Advanced, as well as the considerable quantity of paired frequencies it contains (70 + 70 MHz).²⁵
56. Moreover, each of these spectrum bands is following its own evolutionary path, one of which (ie., the 700 MHz band) is on a much faster trajectory in terms of the development of a device ecosystem than the other.
57. At best, therefore, the two bands are complementary, with the 700 MHz band being ideal to expand coverage, which is particularly important for new entrants who are still building out their networks, whereas the 2500 MHz band affords enhanced capacity to accommodate burgeoning demand.
58. Given these considerations, it would not be fair or accurate to suggest, as Bell has done, that one need merely add together all of the available spectrum in the 700 and 2500 MHz bands in order to determine whether spectrum caps are needed in order to promote sustainable competition and consumer choice.
59. The fact is that Shaw and other new entrants require spectrum in the 700 MHz band for precisely the same reasons as the incumbents. New entrants are following the very same geographic roll-out strategies as the incumbents when they first deployed their own commercial mobile networks. As the incumbents well know, these roll-out programs typically begin in high density urban areas and then extend to suburban and rural areas. New entrants such as Shaw fully intend to pursue deployments in rural

²⁴ Telus 2500 MHz Comments, April 19, 2011, para. 7.

²⁵ Quebecor 2500 MHz Comments, April 19, 2011, para. 25. See also RIM 2500 MHz Comments, April 19, 2011, para. 7.

areas where the propagation characteristics of the 700 MHz band allow for more economical deployments.

60. Furthermore, Bell's proposal glosses over the fact that there is already a very heavy concentration of spectrum in the hands of the wireless incumbents²⁶ and that if the Department does not adopt distinct mechanisms for 700 MHz spectrum on the one hand and 2500 MHz spectrum on the other, this problem will only become more entrenched and acute.
61. Given the significant disparity between the spectrum holdings of the incumbents and those of new entrants, it would be naïve to assume that this imbalance will somehow be remedied by conducting a wide open auction of 700 and 2500 MHz spectrum without any mechanisms to promote equitable access to spectrum.
62. Canada has a spectrum concentration problem which can be easily addressed through light-handed measures such as Shaw's in-band cap proposals for the 700 MHz and 2500 MHz auctions.

H. The 700 MHz Auction Must Be Held First

63. Although the Department did not solicit comments on auction timing in this particular Consultation, a few parties took the opportunity to revisit their positions on this issue as originally submitted in the Department's 700 MHz Consultation.
64. For example, Telus originally took the position that the Department should hold the auction of 2500 MHz spectrum before the auction of 700 MHz spectrum. In its latest submissions on this issue, Telus continues to favour this approach; however, it has tempered its original position by arguing that the auction of 2500 MHz spectrum could take place simultaneously with the auction of 700 MHz spectrum provided that both auctions are conducted as soon as possible.

²⁶ See Shaw 2500 MHz Comments, April 19, 2011, para. 42.

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65. Bell, on the other hand, has adopted a completely different position on the issue of auction timing than the position that it initially advocated in the 700 MHz Consultation. In particular, in the 700 MHz Consultation, Bell recommended that the Department adopt an approach under which licences in the 700 MHz band would be auctioned first “followed by an auction for licences in the 2500 MHz band approximately one year later.”²⁷
66. In the current Consultation, Bell has retreated entirely from this position. Under Bell’s new approach, it is now advocating that the Department conduct a combined auction of 700 and 2500 MHz spectrum, rather than two separate auctions that are spaced 12 months apart.
67. Although the alleged rationale given by Bell for this new approach is that it would allow “network operators to focus their efforts in order to obtain the appropriate mix of spectrum holdings given the business model that they are trying to implement,”²⁸ the real reason is that this lines up more neatly with Bell’s stated opposition to any type of auction measure that is designed to promote equitable access to spectrum. Indeed, as discussed above, Bell asserts that no additional measures are needed in order to promote fair access to spectrum with a joint auction.
68. In contrast to the positions taken by Bell and Telus, other parties, such as Public Mobile, have argued that if the Department conducts separate auctions for 700 and 2500 MHz spectrum, then the auction for 700 MHz spectrum should take place first in order to reflect the fact that 700 MHz spectrum is superior to and more valuable than 2500 MHz spectrum.²⁹
69. Shaw agrees that the 700 MHz auction should occur first. New entrants currently have no low-frequency spectrum and the ecosystem for devices and equipment in the 2500

²⁷ Bell 700 MHz Comments, February 28, 2011, para. 162.

²⁸ Bell 2500 MHz Comments, April 19, 2011, para. 11.

²⁹ Public Mobile 2500 MHz Comments, April 19, 2011, p. 13.

MHz band is not developing as quickly as it is for 700 MHz spectrum. In order for new entrants to be able to expand their overall suite of service offerings to their subscribers and thereby provide consumers with the choice they clearly want and deserve, new entrants will need spectrum in the 700 MHz band before they need spectrum in the 2500 MHz band.

70. Shaw notes that the deployment that has taken place in the 2500 MHz band in the United States thus far has been in the TDD portion of the band, which will only make up a small amount of the spectrum available in the auction of 2500 MHz spectrum in Canada.
71. Given these considerations, there is no sense in conducting the 2500 MHz auction in advance of the auction of 700 MHz spectrum. Delaying the 700 MHz auction will only delay the ability of new entrants to roll-out services to rural areas using 700 MHz spectrum and impede their efforts to establish more diverse spectral holdings.
72. Shaw urges the Department to look beyond the flawed arguments that have been raised by Bell and the other incumbents in relation to auction timing and design and opt instead for auction rules that allow all parties a fair chance to first gain access to low-frequency spectrum by conducting the 700 MHz first. Then the Department should allow all parties a reasonable opportunity to acquire spectrum in the 2500 MHz band. This auction timing proposal is the most sound policy approach to the two spectrum bands which are clearly distinct.

I. Foreign Ownership Rules

73. As in the 700 MHz Consultation, it is clear that most parties who submitted comments to this proceeding agree that the issue of relaxing the foreign ownership rules is irrelevant to the issue of whether there should be measures to promote equitable access to spectrum.

J. Deployment Targets

74. Of those parties who submitted comments on the issue of deployment obligations, most argued that it would be inappropriate to impose firm roll-out obligations on holders of spectrum licences in the 2500 MHz band because of the propagation characteristics of this spectrum and the current state of development of the device ecosystem. Included among the parties taking this position were MTS Allstream, Bell, Quebecor, and Rogers.
75. However, as Quebecor points out, the 2500 MHz band “forms a part of what is referred to as high frequency spectrum above 1 GHz, and as such is much more similar, in terms of propagation characteristics, to the Advanced Wireless Services (AWS) band.”³⁰ On this basis, Quebecor proposed that the Department use an approach for the 2500 MHz band that is similar to the approach that it adopted in relation to AWS licences.³¹
76. In the view of Shaw, this approach makes sense for a spectrum band that in the words of Bell “is not conducive for the deployment of mobile wireless services in rural areas, but can be effective for increasing capacity in more localized ones.”³² Shaw therefore endorses Quebecor’s proposal to establish service roll-out targets for licences in the 2500 MHz band, similar to the targets that were applied by the Department to AWS licensees as reflected in Appendix C of the AWS Licensing Framework.

³⁰ Quebecor 2500 MHz Comments, April 19, 2011, para. 48.

³¹ AWS Licensing Framework, Appendix C.

³² Bell 2500 MHz Comments, April 19, 2011, para. 76.