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Notice No. SLPB-002-20

Consultation on the Technical and Policy Framework for the 3650-4200 MHz Band and Changes to the Frequency Allocation of the 3500-3650 MHz Band

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Reply Comments

of

Xplornet Communications Inc.

November 30, 2020

INTRODUCTION AND EXECUTIVE SUMMARY

1. Xplornet Communications Inc., on behalf of itself and Xplore Mobile Inc. (collectively, "Xplornet"), has reviewed comments filed by parties in relation to the *Consultation on the Technical and Policy Framework for the 3650-4200 MHz Band and Changes to the Frequency Allocation of the 3500-3650 MHz Band* ("Consultation") currently being undertaken by Innovation, Science and Economic Development Canada ("ISED") and is pleased to provide its reply comments.

2. Xplornet supports ISED's work to repurpose spectrum within the 3650-4200 MHz band for flexible use. This mid-band spectrum is essential to support the delivery of 5G services for Canadians in all regions of Canada.

3. In our comments, we provided four recommendations to assist ISED in designing a policy framework to repurpose the 3800 MHz band that best promotes the objective of the Spectrum Policy Framework for Canada ("Spectrum Policy Framework") and its Enabling Guidelines.

4. Having reviewed the comments of interested parties, Xplornet has made certain modifications to its recommendations. In these reply comments, we expand upon our modified views. Through our restated recommendations, Xplornet urges ISED to:

    1) Permit flexible use in the 3800 MHz band to the greatest extent possible by releasing spectrum up to 4000 MHz as soon as possible and positioning the 4000-4200 MHz band to be made available in the coming years;

    2) Relocate the Wireless Broadband Systems ("WBS") band to the 3450-3500 MHz range[1] and allocate the 3400-3450 MHz range to WBS as soon as possible;

[1] To facilitate this recommendation, Xplornet proposes that ISED modify the spectrum to be allocated as part of the upcoming 3500 MHz auction to be a 200 MHz block of spectrum from 3500-3700 MHz, instead of the block from 3450-3650 MHz as planned.

- The all-come, all-served ("ACAS") licensing framework for WBS should be maintained in all tiers and only modified to be licensed at the Tier 5 level and to facilitate coordination between deployments;

- The moratorium on new WBS deployments should be lifted;

3) Allocate non-WBS flexible-use spectrum through an ISED-run auction; and

4) Strive to align the 3800 MHz band with the 3500 MHz band to promote the operation of the 3500 MHz band and the 3800 MHz band as a single block of spectrum;

- It is essential for a 3800 MHz auction to include a set-aside;

- If the auction processes for the 3500 MHz band and 3800 MHz band are combined, the amount of spectrum that is set aside needs to be increased to ensure that at least 25% of the spectrum available for auction is set aside for new entrants;

- If the frequency assignment processes for the 3500 MHz band and 3800 MHz band are combined, special provisions are needed to ensure existing 3500 MHz licensees are able to maintain services for their customers.

RECOMMENDATIONS FOR A 3800 MHz POLICY FRAMEWORK THAT BEST PROMOTES THE OBJECTIVE OF THE SPECTRUM POLICY FRAMEWORK

5. In establishing a policy framework for repurposing spectrum within the 3800 MHz band, ISED is guided by the Spectrum Policy Framework. The core objective of the Spectrum Policy Framework requires ISED to manage spectrum in order "[t]o maximize the economic and social benefits that Canadians derive from the use of the radio frequency spectrum resource."

6. The Spectrum Policy Framework sets out a number of Enabling Guidelines ("Guidelines") that provide specific directions to ISED as to how it should regulate to achieve the core objective. We submit that the following Guidelines are particularly relevant to the present process and provide helpful instruction to ISED as it designs a framework for the repurposing of spectrum within the 3800 MHz band:

    - "(a) Market forces should be relied upon to the maximum extent feasible;

    - (b) Notwithstanding (a), spectrum should be made available for a range of services that are in the public interest;

    - (d) Regulatory measures, where required, should be minimally intrusive, efficient and effective;

    - (f) Spectrum management practices, including licensing methods, should minimize administrative burden and be responsive to changing technology and market place demands; and

    - (h) Spectrum policy and management should support the efficient functioning of markets by:

        - permitting the flexible use of spectrum to the extent possible;

        …

        - making spectrum available for use in a timely fashion;"[2]

7. Xplornet provides four specific recommendations to ISED on how it can create a policy framework for repurposing spectrum within the 3800 MHz Band that best promotes these Guidelines, and in turn, the core objective of the Spectrum Policy Framework.

[2] Spectrum Policy Framework, page 9.

Recommendation 1: **ISED should permit flexible use in the 3800 MHz band to the greatest extent possible by releasing spectrum up to 4000 MHz as soon as possible and positioning the 4000-4200 MHz band to be made available in the coming years (Guideline (h))**

ISED should release spectrum up to 4000 MHz for flexible use as soon as possible

8. As part of the Consultation, ISED is proposing to release new spectrum for flexible use in the 3800 MHz band. Specifically, ISED is proposing to make spectrum up to 4000 MHz available for flexible use and to maintain spectrum in the 4000-4200 MHz band for use by Fixed Satellite Service ("FSS") C-band services. As noted in ISED's 2019 Decision regarding preliminary changes to the 3800 MHz band[3] ("2019 Decision"), ISED intends to hold an auction to allocate this spectrum in 2022.[4]

9. As detailed in our comments, Xplornet supports ISED's proposal to provide increased access to flexible use spectrum.[5] Doing so will allow wireless broadband services to meet the needs of Canadians and promote the objective of the Spectrum Policy Framework.

10. Guideline (h) of the Spectrum Policy Framework specifically directs ISED to make spectrum available for flexible use to the greatest degree possible. In order to promote Guideline (h), Xplornet submits that ISED should strive both to make as much spectrum as possible available for flexible use and to do so as soon as reasonably possible.

11. With respect to timing, there are a number of considerations that need to be taken into account by ISED, as there are multiple users who would need to clear spectrum in the 3650-4000 MHz frequency range in order for this spectrum to be made available for new flexible use.

[3] *Decision on Revisions to the 3500 MHz Band to Accommodate Flexible Use and Preliminary Decisions on Changes to the 3800 MHz Band*, SLPB-001-19.

[4] 2019 Decision, D17.

[5] Xplornet, Comments, paragraphs 6 to 10.

12. Specifically, the 3650-3700 MHz range is currently allocated to WBS licensees. Assuming that these licensees will be asked to clear this 50 MHz of spectrum, the benefits of which are discussed in greater detail below, these licensees will require time to migrate their operations to alternate frequencies. As described in our comments in response to Q16, if ISED requires WBS licensees, like Xplornet, to migrate to the 3900-3980 MHz range, this would require significant effort and could not be completed before December 2025. Other WBS licensees, including the BCBA, CanWISP and the Region of Durham have also indicated that they would require a similar timeframe to migrate their operations.[6] Accordingly, if ISED proceeds with its Option 2 to migrate WBS licensees to the 3900-3980 MHz band, December 2025 is the earliest reasonable opportunity for spectrum in the 3650-3700 MHz range to be made available for new flexible use. However, if ISED adopts our proposal below (see Xplornet Option 6), Xplornet submits that the 3650-3700 MHz range could be cleared by existing WBS licensees in a much shorter period of time.

13. Spectrum in the 3700-4000 MHz frequency range is currently used by C-band FSS operators. These operators have indicated that they are able to clear these frequencies in a relatively rapid manner. For example, Telesat has emphasized its ability to make spectrum in this range available as soon as December 2021.[7] SES[8], Intelsat[9] and Eutelsat[10] have all supported a transition deadline of December 2023. SES has indicated that it is already in the process of creating migration plans to move its Canadian customers off of this spectrum.[11]

14. Xplornet also submits that ISED should release as much spectrum as possible for flexible use. In this regard, there has been considerable discussion amongst

[6] The BCBA has indicated they require at least two years to migrate to 3900-3980 MHz (BCBA, Comments, paragraph 38); CanWISP has stated they would require more than three years (CanWISP, Comments, page 17); and the Region of Durham has stated they could not migrate before December 2025.

[7] Telesat Comments, paragraph 10.

[8] SES Comments, page 19.

[9] Intelsat Comments, paragraph 60.

[10] Eutelsat Comments, paragraph A24.1.

[11] SES Comments, page 19.

interested parties concerning whether satellite-dependent communities require continued access to the full 500 MHz of spectrum in the 3700-4200 MHz range. As we described in our comments, it is not clear that this is necessary.[12] However, if ISED determines that additional spectrum is required for C-band FSS in satellite-dependent areas, Xplornet echoes comments made by other interested parties that ISED should take care to define the geographic boundaries of satellite-dependent areas to ensure that Canadians can benefit from flexible use services to the greatest extent possible.

15. For example, in its comments, the Radio Advisory Board of Canada ("RABC") has discussed why the Tier 4 service areas identified for exemption from certain provisions in GL-10 for mmWave bands should not be used to define satellite-dependent areas. Using these Tier 4 areas would inappropriately remove the possibility for 5G services to be deployed in many areas with terrestrial coverage today.[13]

16. Ericsson has equally submitted that the definition for satellite-dependent areas should be carefully defined in a flexible manner. As noted by Ericsson:

> "the definition [for satellite-dependent areas] should not be rigidly bound to a geographical notation (Tier 4, Tier 5, etc.) but should be flexible enough to take into consideration changes happening over time: technology advancements, demographical changes, evolving business cases in bringing broadband to users and so on. An area may be a satellite-dependent area today but over time will be able to rely on, in addition to satellite, other terrestrial technologies to delivery broadband services."[14]

17. We support these views and encourage ISED to carefully define the boundaries of satellite-dependent areas, should special rules be required for these parts of the country.

18. While new coordination rules may be required to manage potential interference between FSS and flexible use systems as part of this proceeding, Xplornet submits

[12] Xplornet, Comments, Attachment, Response to Q8.

[13] RABC, Comments, paragraph 63.

[14] Ericsson Comments, page 8.

that ISED should not create rules of this nature as part of the present proceeding. These rules should be established through a subsequent process to develop a standard radio system plan.

ISED should prepare to release the 4000-4200 MHz band for flexible use in a few years' time

19. It is clear from the record of this proceeding that demand for C-band FSS is decreasing and will continue to decrease over the coming years. Telesat has indicated that it is already able to clear an additional 100 MHz of spectrum (the 4000-4100 MHz range) within the next few years. In order to clear this spectrum, Telesat intends to migrate much of its existing C-band customer base to services that will be provided by its new low Earth orbit ("LEO") constellation.[15]

20. In contrast to Telesat, it appears that the 4000-4100 MHz frequency range is not yet ready to be cleared by all FSS providers. None of Eutelsat[16], SES[17], or Intelsat support the 4000-4100 MHz range being repurposed for flexible use at the present time. As stated by Intelsat:

> "… coordination challenges to protect FSS in the U.S. that will continue to operate in the 4000-4100 MHz band will severely encumber this spectrum in Canada, further diminishing its value. Accordingly, Intelsat does not support Telesat's alternative proposal to require C-band operators to repack their C-band activities within the 4000-4100 MHz frequency band."[18]

21. Indeed, the CBC has indicated that it is specifically relying on spectrum in the 4000-4100 MHz capacity from Intelsat to support its distribution network.[19]

22. Given that FSS operators appear to be at different stages in their ability to clear spectrum within the 4000-4200 MHz range, Xplornet submits that it would be appropriate to maintain the current allocation of this spectrum to FSS to support

[15] Telesat, Comments, paragraph 62.
[16] Eutelsat, Comments, paragraph A59.1.
[17] SES, Comments, page 32.
[18] Intelsat, Comments, paragraph 48.
[19] CBC, Comments, response to Q53.

the C-band operations of Telesat and other authorized FSS operators at the present time.

23. However, given that demand for spectrum from C-band FSS is decreasing, and new LEO services may enable parties who currently rely on the 4000-4100 MHz band to transition off of this spectrum in the coming years[20], Xplornet encourages ISED to build a band plan today that contemplates additional spectrum in the 4000-4200 MHz range being made available for flexible use in the near term. This view is shared by other parties to the proceeding, like Ericsson, who also encourages ISED to take a long term view in building a band plan for the 3400-4200 MHz frequency range.[21]

24. To this end, Xplornet encourages ISED to allocate spectrum within the 3400-4200 MHz band as part of this proceeding with a long term view in mind, and to launch a new consultation to consider releasing additional spectrum in the 4000-4200 MHz frequency range within the next three years. Within three years time, it is likely that FSS operators will be in a better position to clear additional spectrum within the 4000-4200 MHz range. Holding a further consultation of this nature would be consistent with releasing spectrum for flexible use to the greatest degree possible, as required by Guideline (h) of the Spectrum Policy Framework.

Recommendation 2: **ISED should relocate the WBS band to 3450-3500 MHz today and allocate the 3400-3450 MHz range to WBS as soon as possible (Guideline (d))**

25. Having reviewed the comments of interested parties with respect to the future use of the 3650-3700 MHz frequency range by WBS licensees, it is clear that there are three goals that ISED should seek to achieve in its decisions related to WBS spectrum:

[20] Even the CBC has indicated they are interested in new LEO services to support their transition network. See CBC, Comments, response to Q53.

[21] Ericsson, Comments, page 7.

1) ISED should expand access to WBS spectrum from 50 MHz to better support rural broadband deployments that meet the Universal Service Objective (“USO”);

2) ISED should strive to maximize the amount of contiguous mid-band spectrum that can be made available for auction across the 3400-4200 MHz band; and

3) ISED should strive to avoid imposing displacement costs on existing WBS licensees and minimize the amount of time necessary for a migration to occur.

26. There are five main proposals that have been put forward by interested parties that are all designed to promote one or more of these goals. Xplornet submits that ISED should adopt a solution that achieves all of these goals. By maximizing these three goals, Xplornet submits that ISED can best meet the objective of the Spectrum Policy Framework through the introduction of efficient regulation, as required by Guideline (d).

27. To this end, Xplornet has proposed a new sixth option for ISED’s consideration that flows from some of the other proposals put forward. The proposal is to move the WBS band to the 3450-3500 MHz range today and, as the spectrum becomes available in the future, expand it include 3400-3450 MHz. As illustrated in Table 1 below, Xplornet submits that this sixth option best promotes the three goals above better than any other proposal that has been put forward.

Table 1 – Ability of WBS proposals to meet the objective of the Spectrum Policy Framework

Options for allocation of WBS spectrum	Expands WBS?	Avoids displacement costs for current licensees and minimizes delay?	Contiguous spectrum across the 3500 MHz and 3800 MHz bands?	Allows for future spectrum >4000 MHz to be contiguous with the 3800 MHz Band?
ISED Option 1 (3650-3700 MHz)	No	Yes	No	Yes
ISED Option 2 (3900-3980 MHz)	Yes	No	Yes	No
New Option 3 (3650-3730 MHz)[22]	Yes	Yes	No	Yes
New Option 4 (3400-3450 MHz)[23]	No	Yes	Yes	Yes
New Option 5 (3400-3450/3900-3980 MHz)[24]	Yes	Yes	Yes	No
Xplornet Option 6 (3450-3500 MHz today with 3400-3450 MHz added when possible)	Yes	Yes	Yes	Yes

<u>ISED Option 1 and New Option 3:</u> Maintaining WBS licensees in the 3650-3700 MHz, or an expanded range from 3650-3730 MHz, impairs the efficient deployment of 5G services

28. Parties that have argued in favour of ISED Option 1 or New Option 3 have done so in order to avoid having to displace their operations to alternative frequencies, and incurring associated costs.

29. Xplornet submits that ISED should not adopt either ISED Option 1 or New Option 3, as this will meaningfully impair Canada's 5G deployments.

[22] Proposed by Iristel. See Iristel, Comments, paragraph 43.

[23] Proposed by Bell and Rogers. See Bell, Comments, paragraph 57 and Rogers, Comments, paragraph 124.

[24] Proposed by the BCBA. See BCBA, Comments, paragraph 27.

30. It is well established in the 3500 MHz Policy Framework[25] that blocks of 100 MHz of contiguous spectrum are optimal to allow for efficient 5G deployments[26]. By interrupting the 3450-4000 MHz frequency range with the current WBS band, licensees will be less able to obtain contiguous spectrum to support their 5G deployments.

31. In its comments, Telus has provided concrete data demonstrating why ISED should promote contiguous spectrum deployments.[27] Based on these data, it is clear that the reduction in efficiency caused by non-contiguous deployments will reduce the quality of service that can be delivered to Canadians. In order for Canadians to have access to world-leading 5G services, ISED should take steps to promote contiguous deployments to the greatest extent possible.

ISED Option 2 and New Option 5: Allocating the 3900-3980 MHz range to WBS will prevent future flexible use spectrum in the 4000-4200 MHz range from being contiguous with the 3800 MHz band and impose significant displacement costs on existing WBS licensees

32. Xplornet has changed its view with respect to its previous support for ISED's proposal to allocate the 3900-3980 MHz range to WBS. As noted above, it is clear that additional spectrum in the 4000-4200 MHz range can be made available for flexible use in the coming years. Xplornet submits that ISED should allocate spectrum to WBS in a manner that will enable further spectrum in the 4000-4200 MHz to be contiguous with the 3800 MHz band. Allocating the 3900-3980 MHz frequency range to WBS will preclude the possibility of spectrum in the 4000-4200 MHz range being allocated in a contiguous manner.

33. Xplornet also notes that relocating WBS licensees to the 3900-3980 MHz frequency range will cause licensees to experience significant costs. Bell has estimated that it would cost $15 million to $20 million for an existing licensee serving 5,000 subscribers to relocate its equipment to the 3900-3980 MHz

[25] *Policy and Licensing Framework for Spectrum in the 3500 MHz Band*, SLPB-001-20 ["3500 MHz Policy Framework"].
[26] 3500 MHz Policy Framework, paragraph 41.
[27] Telus, Comments, paragraph 26.

frequency range[28] and the Region of Durham has detailed that it would cost $1.5 to $2 million to migrate their 80 sites to these frequencies[29]. Xplornet has not provided specific estimates to ISED for confidentiality reasons, but fully agrees that the displacement costs associated with relocating its WBS operations to the 3900-3980 MHz range would be significant.

34. If ISED grants displacement costs to any party as a result of this proceeding, Xplornet submits that all parties should be entitled to compensation for their displacement costs, including WBS licensees if they are required to relocate to new frequencies, as well as licensees impacted by the repurposing of the 3500 MHz band in 2021 and beyond. All parties who are required to displace their operations will incur costs that will be significant to their operations, and it would not be fair to provide displacement costs to only a subset of parties who are required to incur such costs as a result of ISED's repurposing of spectrum.

New Option 4: Allocating 3400-3450 MHz to WBS does not support rural Canadians

35. Other parties, such as Bell[30] and Rogers[31] have argued that WBS licensees should be relocated to the 3400-3450 MHz frequency range.

36. Xplornet notes that these proposals are positive because they allow for contiguous flexible use spectrum to be made available from 3450-3980 MHz today, and for contiguous spectrum to be added from 3980-4200 MHz in the future.

37. These proposals also avoid the need for existing WBS licensees to incur significant displacement costs, as equipment that has been deployed to use WBS spectrum is capable of operating in the 3400-3450 MHz range.

38. Despite these positive features, these proposals are problematic for two important reasons.

[28] Bell, Comments, paragraph 57.

[29] Region of Durham, Comments, page 2.

[30] Bell, Comments, paragraph 35.

[31] Rogers, Comments, paragraph 48.

39. Firstly, these proposals do not expand the WBS band, which is necessary to support rural broadband deployments. As we stated in our comments, an expanded WBS band is critical in order to meet the needs of Canadians.[32] In many areas of the country today, demand within the current WBS band greatly exceeds the 50 MHz of capacity provided by this spectrum. It is imperative for ISED to allocate additional spectrum to WBS licensees in order to promote increased access to broadband service meeting the USO. Accordingly, Xplornet submits that it would not be appropriate to relocate the WBS band to only a limited block of 50 MHz from 3400-3450 MHz.

40. Furthermore, it is not clear that this spectrum can be made available to WBS licensees at the present time.

41. In the 2019 Decision, ISED noted that "moving WBS operators out of the 3650-3700 MHz band and into the 3400-3450 MHz band could be feasible in the future."[33] However, only a little over a year ago when the 2019 Decision was issued, ISED was not yet prepared to enable flexible use in this frequency range. ISED noted that this spectrum is currently required for radiolocation services and further work to develop spectrum sharing technologies was necessary to mitigate potential interference between radiolocation applications and flexible use services before this spectrum could be allocated for new uses.[34]

42. Accordingly, while we believe that additional spectrum in the 3400-3450 MHz range can be made available for flexible use in the coming years, it is not clear that this spectrum block is available to support flexible use services at the present time. To facilitate the more rapid deployment of the 3500-3980 MHz frequency range, the alternative spectrum allocated for WBS licensees needs to be available for use today.

[32] Xplornet, Comments, paragraph 29.

[33] 2019 Decision, paragraph 54.

[34] 2019 Decision, paragraphs 52 to 55.

Xplornet Option 6: Allocating 3450-3500 MHz to WBS, with the addition of the 3400-3450 MHz range as soon as possible, best promotes the objective of the Spectrum Policy Framework

43. Xplornet has proposed a new sixth option that leverages the positive aspects of New Option 4 and addresses its downfalls.

44. Like New Option 4, Xplornet proposes that WBS licensees be moved to the bottom of the 3500 MHz band in order maximize the availability of contiguous flexible use spectrum all the way to 4200 MHz.

45. However, Xplornet proposes that instead of allocating the 3400-3450 MHz frequency range to WBS licensees today – which is a limited block of 50 MHz of spectrum that is not likely ready to be used for flexible use – ISED should allocate 50 MHz of spectrum from 3450-3500 MHz to WBS.

46. While the frequency range 3450-3500 MHz is part of the 200 MHz of spectrum set to be auctioned in the upcoming 3500 MHz auction, Xplornet submits that ISED could simply revise the frequencies to be allocated as part of that process to be 200 MHz of spectrum from 3500-3700 MHz. No other elements of the 3500 MHz auction would need to be changed.

47. Existing WBS licensees could easily migrate their services to the 3450-3500 MHz range, as equipment that is currently in use is able to operate using these frequencies. Xplornet submits that this migration could be done in less than six months without the need to incur significant displacement costs. The BCBA has also indicated that they could begin their transition process immediately if able to migrate to spectrum lower in the band.[35]

48. In order to provide WBS licensees with additional spectrum to expand their service offerings, ISED could take steps to also make the 3400-3450 MHz block available to WBS licensees as soon it is possible to do so in the future.

[35] BCBA, Comments, paragraph 36.

49. Xplornet believes that this proposal is the best option for ISED to adopt, as it most effectively promotes the objective of the Spectrum Policy Framework. This proposal will:

    1) Avoid the need for existing WBS licensees to incur significant displacement costs and minimize the time required for a relocation to occur;

    2) Maximize the availability of contiguous flexible use spectrum across the 3500-4200 MHz frequency range; and

    3) Provide WBS licensees with an expanded block of 100 MHz of flexible use spectrum in the coming years.

The ACAS licensing framework for WBS should be maintained in all tiers and only modified to be licensed at the Tier 5 level and to facilitate coordination between deployments

50. ISED has received comments from parties concerning other changes that should be adopted to modify the current licensing framework for WBS spectrum. Xplornet supports the adoption of two proposals.

51. The first change that would be appropriate for ISED to adopt would be to shift from licensing WBS spectrum on a Tier 4 basis to a Tier 5 basis. WBS deployments are generally site-specific or for smaller areas than the full Tier 4 licensed areas. By issuing Tier 5 licences, it will be easier to manage coordination issues that arise.

52. Secondly, Xplornet submits that ISED should take steps to improve the coordination process for WBS licensees through a better database and through mandatory use of TDD time frame synchronization and 3GPP compliant radios using GPS synchronization.[36] GPS synchronization is essential to effectively reduce interference in this band. Xplornet does not support reduced power measures in the WBS band. Proposals to facilitate coordination through power reductions are not appropriate and should be rejected. In rural areas, which are often heavily treed, power reductions severely limit a site's footprint, hindering the

[36] See, Xplornet, Comments, Attachment, Response to Q19 for more detail.

efficient deployment of network infrastructure and reducing the speeds available to customers.

53. TekSavvy and Telus have made suggestions that ISED should make other fundamental changes to the licensing framework associated with WBS spectrum. Xplornet submits that ISED should reject these proposals for the reasons below.

WBS spectrum should remain ACAS and in all tiers

54. TekSavvy has argued that ISED should abandon the ACAS licensing framework for WBS spectrum in favour of an auction that would allocate dedicated use licences to individual service providers for almost all WBS spectrum.[37] Xplornet submits that this proposal, if adopted, would cause significant harm for rural Canadians.

55. Indeed, the purpose of WBS spectrum is to provide access to shared spectrum to support the delivery of wireless broadband services to Canadians across the country at a lower cost. As ISED described in its 2019 Decision:

> "Another element of ISED's approach to encouraging wireless coverage to rural and remote areas is making spectrum available at a lower cost. This includes providing additional spectrum for licence-exempt use such as white space devices, as well as the benefits of licensing spectrum on a shared basis (e.g. all-come, all-served such as wireless broadband service (WBS) in 3650 MHz), which allows access to spectrum for all entities, including small providers, non-profit providers, and new providers that may be interested in a low-cost spectrum option for broadband deployment in rural and remote areas."[38]

56. Because of this low-cost spectrum, numerous providers are able to offer critical broadband services to Canadians that would not otherwise be able to do so.

57. If shared spectrum were taken away and replaced with fully licensed spectrum awarded through an auction, this would remove a low-cost spectrum option that is relied upon by rural Canadians.

[37] TekSavvy, Comments, paragraph 6.

[38] 2019 Decision, paragraph 7.

58. Furthermore, as auctioning this spectrum would result in only a few select service providers having access to the spectrum, numerous providers who currently provide service to Canadians would lose access to this spectrum, reducing the availability of broadband services for their customers. Instead of restricting access to this spectrum, which has been extremely important in helping to meet Canada's broadband objectives, ISED should allocate more spectrum to the WBS band in order to further support the broadband services that rely on this shared resource.

59. Telus has argued that ISED should change the WBS ACAS licensing model to adopt a first-come, first-served ("FCFS") model allowing a maximum of two licensees per service area. These licensees would be subject to deployment conditions to ensure that the spectrum is being used.[39]

60. ISED should equally reject Telus' proposal. Migrating WBS to a FCFS system would similarly result in Canadians losing broadband service. In many tiers today, more than two service providers have already deployed in the WBS band. If only two service providers were permitted to operate, this would result in the loss of service to Canadians, harming Canada's broadband objectives.

61. The ACAS model that has been in place for WBS spectrum has been very successful in extending wireless broadband services to Canadians. ISED should not alter the licensing model for this spectrum. It should encourage the existing model to extend even greater benefits to Canadians by allocating additional spectrum to this band, as discussed above.

62. Finally, we also note that Telus has argued that WBS spectrum should be eliminated in all metropolitan Tier 5 licence areas, as well as all Tier 5 licence areas containing a large or medium population centre (i.e., any Tier 5 with a community of over 30,000 Canadians). Xplornet submits that this proposal is inappropriate and should be rejected. WBS spectrum today is actively being used to serve Canadians in many Tier 5 areas that contain a community of greater than 30,000 or 100,000 Canadians. Adopting Telus' proposal would eliminate the availability of

[39] Telus, Comments, paragraph 15.

this important shared spectrum resource, removing broadband services from the marketplace counter to ISED's broadband objectives. WBS spectrum should be maintained in all tiers across Canada.

The moratorium on new WBS deployments should be lifted

63. Finally, Xplornet reiterates its view that it is counter to the Spectrum Policy Framework to implement a moratorium concerning the use of WBS spectrum, as ISED has implemented and proposed to expand in the Consultation, and notes that this view is shared by other WBS licensees[40]. ISED should continue to allow deployments within this band on a temporary basis, conditional on new deployments being discontinued by the end of a transition period to be established. A moratorium prevents these spectrum resources from being used by licensees to provide broadband where it is needed by Canadians, counter to the Spectrum Policy Framework. Xplornet encourages ISED to remove its moratorium and to implement alternative measures that allow for WBS deployments of a temporary nature.

Recommendation 3: ISED should allocate non-WBS flexible-use spectrum through an ISED-run auction (Guidelines (a), (b) and (f))

64. At paragraph 182 of the Consultation, ISED has summarized its previously stated views that it intends to allocate flexible use licences for spectrum in the 3800 MHz band[41] through the use of an auction.

65. Xplornet supports the use of an auction designed and managed by ISED to allocate spectrum in the 3800 MHz band. As set out in the Framework for Spectrum Auctions in Canada:

[40] See, BCBC, Comments, paragraph 9 and CanWISP, Comments, paragraph 17.

[41] Apart from licences for flexible use WBS spectrum.

> "[ISED] will generally consider the following broad conditions in determining whether an auction process will be used as the spectrum assignment mechanism:
>
> - whether the demand for spectrum is expected to exceed the available supply; and
>
> - whether government policy objectives can be fully met through the use of an auction."[42]

66. Xplornet submits that demand will exceed supply for the mid-band spectrum that ISED is proposing to repurpose for flexible use. Even with the entire 3450-3900 MHz (or 3500-3980 MHz if our WBS proposal is adopted) frequency range licensed for flexible use, this spectrum will remain insufficient to satisfy the demands of operators deploying 5G services for Canadians. Indeed, the response to this Consultation is evidence of the interest in this spectrum

67. The use of an auction inherently maximizes reliance on market forces in the allocation of spectrum, as required by Guideline (a) of the Spectrum Policy Framework. Further to this, Guidelines (b) and (f) specifically require ISED to ensure that spectrum is made available to a range of services that are in the public interest and to use licensing methods that are responsive to marketplace demands. Accordingly, like numerous other parties[43], Xplornet supports ISED's proposal to hold a further consultation to set the parameters of the auction, including competitive measures and other key elements of an auction structure (e.g., type of auction, deposits, etc.). As discussed in greater detail below, it will be essential for ISED to establish competitive measures to govern the allocation of spectrum in the 3800 MHz band, just as has been determined in relation to the 3500 MHz auction. Only through an auction that is carefully designed and run by ISED can ISED ensure that spectrum will be available to meet the broadband needs of rural and urban Canadians, and that spectrum will be allocated to

[42] Framework for Spectrum Auctions in Canada, page 1.

[43] See for example, Cogeco, Comments, paragraph 74; Shaw, Comments, paragraph 12; and SaskTel, Comments, paragraph 127.

promote the continued development of a competitive marketplace, all as required by the Spectrum Policy Framework.

68. There is near unanimous consensus among wireless service providers ("WSPs") that the Telesat Proposal to allocate the 3700-3900 MHz frequency band through secondary market transactions should be rejected. Among WSPs, the BCBA[44], Cogeco[45], Eastlink[46], Iristel[47], Rogers[48], Quebecor[49], SaskTel[50], Shaw[51] and Telus[52] have all also supported the allocation of spectrum within the 3800 MHz band by an ISED-run auction.

69. FSS service providers have also objected to the Telesat Proposal, raising additional issues, such as Canada's obligations under the Canada-United States-Mexico Agreement.[53]

70. Even the two WSPs who have not advocated for an ISED-run auction, TekSavvy and Bell, have recognized problems with the Telesat Proposal. Like other WSPs, TekSavvy has noted its concerns that "Telesat's proposal for auctioning spectrum does not address the issue of procompetitive measures in auctioning of the 3800 MHz spectrum."[54]

71. Bell supports the Telesat Proposal on the basis that Telesat's secondary market allocation process will enable spectrum to be allocated more rapidly than through an ISED-run auction.[55] At the same time, Bell has specifically recognized that ISED's approval of secondary market transactions is likely highly unworkable and

[44] BCBA, Comments, paragraph 58.
[45] Cogeco, Comments, paragraph 71.
[46] Eastlink, Comments, paragraph 14.
[47] Iristel, Comments, paragraph 117.
[48] Rogers Comments, paragraph 64.
[49] Quebecor, Comments, paragarph 86.
[50] SaskTel, Comments, paragraph 125.
[51] Shaw, Comments, paragraph 122.
[52] Telus, Comments, paragraph 189.
[53] SES, Comments, page 5.
[54] TekSavvy, Comments, response A54.
[55] Bell, Comments, paragraph 106.

Bell thus asks ISED to fetter its own discretion to approve transactions in order to help facilitate a Telesat-run allocation. As stated by Bell:

> "We agree with Telesat that the Department's existing policies provide a 'ready mechanism for the Minister and the Department to ensure that the secondary market transactions do not distort the competitive landscape' because the Minister must approve any spectrum transfer. However, additional clarity from the Department is required regarding the extent to which the Minister and the Department may, as a condition of approval, require changes to any agreement between Telesat and a potential acquirer of spectrum. Telesat will need to clarify what will happen in their process if the Minister rejects the transfer application (e.g., will the potential acquirer have an opportunity to renegotiate the initial agreement). In order to avoid uncertainty regarding Ministerial approval and having to renegotiate the initial agreement, we recommend that the Department indicate that there will be a high expectation of approval if the proposed transfer satisfies all eligibility conditions required by the Department."[56]

72. Xplornet submits that it is not feasible for a band of 200 MHz of spectrum to be allocated through secondary market transactions approved by ISED. When presented with secondary market transactions for approval, ISED would have no way to ensure that a transaction that has been proposed represents the allocation of the specific spectrum that would best serve the needs of Canadians. Regardless of any competitive measures that may be set to attempt to govern how Telesat allocates spectrum, at the end of the day, Telesat would remain in a position to pick with whom it enters into commercial arrangements for spectrum. This is not appropriate and would represent an abdication by ISED of its responsibility to ensure Canada's spectrum resources are allocated to provide maximum benefit for Canadians, particularly if ISED were to follow Bell's suggestion and indicate that parties would have a high expectation of their transaction being approved, thereby fettering its discretion.

73. The executional risk associated with the uncertainty of obtaining approval for a proposed transaction may also disadvantage smaller service providers in accessing spectrum through the Telesat process, leading to market distortions and competitive disadvantage in the marketplace.

[56] Bell, Comments, paragraph 18.

74. If one were to consider how Telesat's proposed allocation process would work in practice, it is evident that this process cannot be relied upon to allocate a full spectrum band, nor is this process able to allocate spectrum more efficiently than an auction managed by ISED.

75. In order to assess a proposed secondary market transaction, under section 5.6.4 of its *Licensing Procedure*[57], ISED would need to consider the post-transfer concentration levels of commercial mobile spectrum that would result following its approval of the proposed transaction. In the context of a full allocation of the 3700-3900 MHz frequency range, ISED would not be able to perform its analysis on concentration levels unless it reviewed a package of all proposed transactions to fully allocate the spectrum at the same time. If ISED determined that one or more parties will hold an undue concentration of spectrum if a transaction were approved, it is unclear how ISED would resolve this. However, resolving such problems would surely result in significant delay that would preclude any form of efficient spectrum allocation.

76. Further to this, it is clear that the process Telesat has proposed would by highly labour intensive for ISED to perform. ISED's review of this entire package of proposed secondary market transactions would necessarily require more time than ISED's standard timeline of 12 weeks, which provides time to assess a single discrete transaction. Xplornet submits that a process to allocate a full 200 MHz of spectrum across the country based on secondary market transactions is fraught with practical considerations that would result in delays. Accordingly, in additional to failing to ensure that spectrum is allocated in a manner that best serves the diverse interests of Canadians as required by Guideline (b), a Telesat-run allocation is likely to be highly inefficient and time consuming relative to an ISED-managed auction.

77. As we discussed in our comments, it is for these very reasons that the Federal Communications Commission ("FCC") equally rejected a similar proposal for

[57] *Licensing Procedure for Spectrum Licences for Terrestrial Services*, CPC-2-1-23.

spectrum within the 3800 MHz band to be allocated by private secondary market transactions in favour of a FCC-run public auction.[58]

78. Xplornet submits that ISED should align with the FCC and reject the Telesat Proposal. Unlike an allocation process based on secondary market transactions, an ISED designed and managed auction can be relied upon to efficiently and fairly allocate spectrum in a manner that best promotes the objective of the Spectrum Policy Framework.

Recommendation 4: ISED should strive to align the 3800 MHz band with the 3500 MHz band to promote the operation of the 3500 MHz band and the 3800 MHz band as a single block of spectrum (Guideline (d))

79. As we discussed above, Xplornet supports the relocation of the WBS band in order to allow for a single contiguous band of licensed flexible-use spectrum from 3500-3980 MHz. By creating a single large block of 480 MHz of mid-band flexible-use spectrum, ISED will best position operators to achieve the blocks of 100 MHz of contiguous spectrum that are optimal to allow for efficient 5G deployments.

80. In this regard, we recommend that, in designing its policy framework for the 3800 MHz band, ISED should strive to align this framework with that of the 3500 MHz band to the greatest degree possible. For example, we recommend that ISED align conditions of licence for spectrum across the 3500 MHz band and 3800 MHz band. Aligning these spectrum bands in this manner would promote the introduction of efficient regulation, as directed by Guideline (d) of the Spectrum Policy Framework.

81. It is likely that matters of this nature may be better addressed as part of a subsequent consultation to set the parameters for the allocation of spectrum in the 3800 MHz band. However, we submit that the allocation process for 3800 MHz spectrum should be similar to that of the 3500 MHz, as these spectrum blocks will serve similar purposes and are subject to similar considerations.

[58] Xplornet, Comments, paragraph 64.

It is essential for a 3800 MHz auction to include a set-aside

82. In this regard, we note that a number of parties have submitted that a set-aside is a critical feature of an auction to allocate the 3800 MHz Band, just as it is for the 3500 MHz band.[59] We agree that a set-aside will be an essential feature of an auction for 3800 MHz spectrum. Without a set-aside, rural and new entrant providers are unlikely to win a sufficient amount of spectrum to promote the objective of the Spectrum Policy Framework.

83. Rural providers have a very different business case than urban providers and this limits their ability to effectively compete for spectrum on the same terms absent a set-aside.

84. In the case of a rural wireless provider, far fewer customers will be served with the same amount of spectrum. While a typical mobile subscriber uses an average of 2.5GB of data per month[60], a typical rural household uses 209.5GB per month[61]. Accordingly, all other variables held constant, an urban mobile provider can serve over 80 times as many subscribers as a rural wireless provider with the same amount of spectrum. The revenue potential from an urban mobile deployment is thus so much greater than can be realized from a rural broadband deployment that it is impossible for these two types of providers to compete on a level playing field in an auction process. A set-aside is essential to address these circumstances and ensure that rural Canadians can benefit from 5G technology.

85. A set-aside will also ensure newer entrants have the opportunity to compete and deploy 5G spectrum at the same time as the largest spectrum holders, thereby ensuring new entrants are not put at a competitive disadvantage in the deployment of 5G service to their customers.

[59] See, for example, BCBA, Comments, paragraph 60; Cogeco, Comments, paragraphs 77 to 83; Quebecor, Comments, paragraphs 86 to 90; Shaw, Comments, paragraph 123; and SaskTel, Comments, paragraph 34.

[60] CRTC, 2019 Communications Monitoring Report, Infographic 8.7.

[61] *Ibid.*, Infographic 8.8.

86. In order to ensure that both rural and urban Canadians can fairly benefit from 3800 MHz spectrum, a set-aside needs to be applied to level the playing field between diverse providers.

If the auction processes for the 3500 MHz band and 3800 MHz band are combined, the amount of spectrum that is set aside needs to be increased to ensure that at least 25% of the spectrum available for auction is set aside for new entrants

87. We note that Telus[62] and Rogers[63] have argued that the 3800 MHz and 3500 MHz auction processes should be combined by ISED. If ISED adopts such a proposal, ISED would need to take steps to modify the auction framework that is in place for the 3500 MHz auction. Specifically, the amount of spectrum that has been set-aside is based on the allocation of 200 MHz of spectrum. If the spectrum to be allocated is to be increased to allocate both the 3500 MHz and 3800 MHz band spectrum, then the amount of spectrum that is set aside should be increased to represent at least 25% of the spectrum to be auctioned.

If the frequency assignment processes for the 3500 MHz band and 3800 MHz band are combined, special provisions are needed to ensure existing 3500 MHz licensees are able to maintain services for their customers

88. If ISED is to hold a single frequency assignment process for the 3500 MHz and 3800 MHz bands, as proposed by Telus[64], Xplornet submits that specific provisions should be adopted to ensure that such a process does not inappropriately impact existing users of 3500 MHz spectrum.

89. When ISED determined in 2014 that it would reallocate the 3500 MHz band to flexible use ("2014 Decision"[65]), it determined that this should be done in a manner that ensures that existing 3500 MHz fixed wireless licensees are able to maintain their existing operations within the 3500 MHz band:

> "Consistent with the policy decision to allow flexible use in the band, the Department considers that it is in the best interest of Canadians to **allow**

[62] Telus, Comments, paragraph 192.

[63] Rogers, Comments, paragraph 252.

[64] Telus, Comments, paragraphs 191 to 200.

[65] Decision Regarding Policy Changes in the 3500 MHz Band (3475-3650 MHz) and a New Licensing Process, DGSO-007-14.

> **the continuation of existing fixed wireless broadband services <u>within the band</u>** across Canada"[66] [Emphasis added]

90. As part of the 2019 Decision, ISED set out a mechanism to determine the entitlements of existing service providers to ensure that they could continue to provide service to their customers served by 3500 MHz spectrum. Appendix A to the 3500 MHz Policy Framework lists the entitlements of existing licensees to new flexible use spectrum in the 3500 MHz band.

91. With respect to frequency assignments, in the 3500 MHz Policy Framework, ISED has provided existing licensees with full tier licences with the opportunity to participate in the assignment round of the 3500 MHz process to bid on specific frequencies within the 3500 MHz band. Holders of partial tier and grid cell licences are not permitted to participate in the assignment process and will be awarded frequencies within the 3500 MHz band after the assignment process has concluded.

92. If ISED were to adopt Telus' proposal to have a single assignment round, specific provisions would need to be put in place to ensure that existing 3500 MHz licensees receive licences in the 3500 MHz band. This is necessary to ensure the continuity of existing services as contemplated by ISED in the 2014 Decision.

93. The radios and customer premise equipment that we have deployed across our network are specifically designed to operate in the 3500 MHz band and are not capable of operating on frequencies above 3700 MHz. Accordingly, if we were assigned frequencies for the new flexible use licences that we are entitled to as part of the 3500 MHz repurposing process in the 3800 MHz band, this would prevent us from serving our customer base and run counter to ISED's determinations in the 2014 Decision.

94. Accordingly, if a single assignment process is to be used to assign frequencies across the 3450-3900 MHz (or 3500-3980 MHz) frequency range, then existing

[66] 2014 Decision, paragraph 37.

licensees must be guaranteed new flexible use licences within the 3500 MHz band (i.e., below 3700 MHz).

CONCLUSION

95. Having reviewed the comments of interested parties, Xplornet has made certain modifications to the recommendations advanced in our comments. In these reply comments, we have expanded upon our modified views. Through our restated recommendations, Xplornet urges ISED to:

1) Permit flexible use in the 3800 MHz band to the greatest extent possible by releasing spectrum up to 4000 MHz as soon as possible and positioning the 4000-4200 MHz band to be made available in the coming years;

2) Relocate the WBS band to the 3450-3500 MHz range and allocate the 3400-3450 MHz range to WBS as soon as possible;

    - The ACAS licensing framework for WBS should be maintained in all tiers and only modified to be licensed at the Tier 5 level and to facilitate coordination between deployments;

    - The moratorium on new WBS deployments should be lifted;

3) Allocate non-WBS flexible-use spectrum through an ISED-run auction; and

4) Strive to align the 3800 MHz band with the 3500 MHz band to promote the operation of the 3500 MHz band and the 3800 MHz band as a single block of spectrum;

    - It is essential for a 3800 MHz auction to include a set-aside;

    - If the auction processes for the 3500 MHz band and 3800 MHz Band are combined, the amount of spectrum that is set

aside needs to be increased to ensure that at least 25% of the spectrum available for auction is set aside for new entrants;

- If the frequency assignment processes for the 3500 MHz band and 3800 MHz band are combined, special provisions are needed to ensure existing 3500 MHz licensees are able to maintain services for their customers.

96. We thank ISED for the opportunity to provide these reply comments.

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