



**TELUS COMMUNICATIONS INC.**

**Reply Comments for  
CONSULTATION on a POLICY and LICENSING  
FRAMEWORK for SPECTRUM in the  
3800 MHz BAND**

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Spectrum Management and Telecommunications

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## Table of Contents

<b>Introduction</b>	<b>4</b>
Executive Summary	5
ISED should implement a cross-band cap to protect competition	5
Cross-band caps support and protect competition	6
ISED should guarantee contiguity to encourage network builders to continue building the best networks in the world	7
Guaranteed contiguity	8
Licence exchange mechanism	9
ISED should enforce strict deployment conditions to connect every Canadian	9
Conclusion	10
<b>TELUS' Comments on Specific Questions Posed by ISED</b>	<b>12</b>
Q1: Coexistence with radio altimeters	12
Q2: Consolidated gateway sites	15
Q3: Tier 4 service areas	17
Q4: Use of pro-competitive measures	20
Q5: ISED's proposed options for pro-competitive measures	24
A cross-band cap is necessary	25
The proposed cross-band cap is sufficient	32
Q6: Alternative options for pro-competitive measures	37
Q7: Set-aside eligibility	39
Q8: Transferability of set-aside licences	42
Q9: Size and quantity of set-aside blocks	43
Q10: Scope of a cross-band cap	45
Q11: Details of a cross-band cap	47
Size of a cross-band cap	47
Grandfathering above a cross-band cap	49
Q12: Duration of a cross-band cap	50
Q13: Generic licences and encumbrance	51
Use of generic licences	51
Threshold for encumbered spectrum	52
Set-aside and encumbered spectrum	54
Treating all set-aside winnings as set-aside blocks	56
Q14: Anonymous bidding	57
Q15: Clock auction format	57
Q16: Clock stage structure and bid processing	58

Q17: Price increments	60
Q18: Activity rule	62
Q19: Assignment and guaranteed contiguity	63
Proposed structure of the assignment stage	63
Pricing mechanics	64
Guarantee of cross-band contiguity for all 3500 MHz band edge licensees	64
Guarantee of cross-band contiguity in all service areas	70
Q20: Supporting contiguity via block swaps	71
Q21: Affiliated and associated entities	73
Q22: Anti-collusion and communication rules	74
Q23: Licence term	74
Q24: Licence transferability and divisibility	76
Q25: Deployment requirements	77
Q26: Accelerated deployment requirements	79
Q27: Deployment requirements for encumbered licences	80
P.183: Other conditions of licence	82
Q28: Measures to promote rural and remote connectivity	85
Potential auction incentive measures to promote rural and remote connectivity	85
Increasing deployment conditions to provide coverage in underserved areas	87
Q29: Opening bids	89
Bid prices for encumbered spectrum	93
Q30: Eligibility points, pre-auction deposits and final payment	94
Eligibility points	94
Pre-auction deposits	95
Final payment	96
Q31: Licence renewal process	99
<b>ANNEX A – Data sources for capacity ratios</b>	<b>100</b>
Table A1: National Metrics	100
Table A2: Provincial Metrics	100
Figure Data	101
Table A3: Figure 1 – National spectrum capacity ratio in 3500/3800 MHz spectrum	101
Table A4: Figure 2 – National spectrum capacity ratio in all spectrum bands	101
Table A5: Figure 3 – Provincial spectrum capacity ratio in all spectrum bands	101

## Introduction

1. TELUS appreciates the opportunity to provide reply comments on the *Consultation on a Policy and Licensing Framework for the 3800 MHz Band* (“the Consultation”)<sup>1</sup>.
2. The 3800 MHz spectrum auction is the government’s last chance to get both its 5G policy and its wireless rural connectivity policy right for a generation.
3. ISED correctly found that the stakes are incredibly high – this is evident from the framework it has proposed. It is a balanced, fair proposal for the 3800 MHz auction.
4. ISED’s framework contains proposals that, taken together, can protect Canada’s competitive landscape and encourage network building. This is important, because getting this policy wrong would create distorted outcomes, stifle competition and delay investment, and ultimately limit the ability for carriers to enable wireless Internet connectivity for all Canadians.
5. **ISED should implement the policies it proposes in this consultation: a cross-band cap, guaranteed contiguity, and measures to encourage rural deployment.** If these policies are implemented, rural and remote connectivity will not only be improved but accelerated, while ensuring that Canadian firms are able to compete effectively by unlocking the benefits of 5G networks.

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<sup>1</sup> *Consultation on a Policy and Licensing Framework for the 3800 MHz Band*, Canada Gazette SLPB-006-21, published December 2021. Link: <https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11757.html>

## Executive Summary

6. In the Consultation, the government sets out three goals for spectrum policy:
  - a. Protect competition;
  - b. Encourage network builders to build the best networks in the world; and
  - c. Connect every Canadian, especially people living in rural, remote, and Indigenous communities.
7. In our initial comments, TELUS broadly supported the proposed auction framework. The key to achieving ISED's stated objectives for spectrum policy is to implement a cross-band cap, guarantee spectrum contiguity, and impose measures to promote rural deployment.

### ***ISED should implement a cross-band cap to protect competition***

8. Virtually all industry participants responding to the Consultation support caps. With the exception of Rogers, SaskTel, and Xplornet, every other respondent either supports or would tolerate a cross-band cap in one form or another. This shows remarkable unity among the carriers.
9. The view that caps are the best pro-competitive measure is also widespread among non-industry respondents. The Nisga'a Lisims Government, Fertilizer Canada, The Kootenay Rockies Tourism Association, The Greater Vancouver Board of Trade, The Edmonton Chamber of Commerce, and the Western Canadian Wheat Growers, among many others, all argue that caps are the best policy for the 3800 MHz spectrum auction.
10. TELUS considers that a cross-band cap (across the 3500 MHz and 3800 MHz bands) is the correct policy response to address the risk of some carriers buying more than they

need to the detriment of others by ensuring that at least four carriers in each region have the opportunity to secure the spectrum that is needed for 5G. A cross-band cap will ensure Canadians continue to benefit from facilities-based competition and high-quality networks.

11. Spectrum caps are recognised as an international best practice. When regulatory authorities around the world have decided that pro-competitive measures are needed in spectrum auctions, caps have overwhelmingly been identified as the correct policy response.<sup>2</sup> In a study of 24 OECD countries' mid-band spectrum auctions, 19 of the 22 countries that used pro-competitive measures used a cap.<sup>3</sup> Notably, the average cap size across these countries is 108 MHz, with smaller caps used only in circumstances where a very limited amount of spectrum was available.
12. **TELUS continues to fully support ISED implementing a cross-band cap in the 3800 MHz auction.** We believe this will encourage and enable the in-market competition that the Government and Canadians expect.

***Cross-band caps support and protect competition***

13. Many submissions recognise that caps are the correct response to the present circumstances: while Canada's wireless market is competitive, maintaining this level of competition is critical as the industry builds out 5G networks. If spectrum holdings are dramatically asymmetric, some carriers will lack sufficient spectrum to deploy high-quality networks and the market would become less competitive.

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<sup>2</sup> Analysys Mason, *Pro-competitive measures and coverage obligations in mid-band auctions*, published February 2022. Link:

<https://www.analysysmason.com/consulting-redirect/reports/procompetitive-coverage-midband/>

<sup>3</sup> *Ibid.*

14. Rogers seeks to maintain its spectrum dominance by suggesting that a cross-band cap is “wildly anti-competitive”. Rogers claims TELUS and Bell would have a competitive advantage with a 100 MHz cap. However, Rogers enjoys (on average) far more spectrum per subscriber than TELUS does, both in the 3500 MHz band and overall across all bands. A 100 MHz (or, as TELUS suggests, 110 MHz) cross-band cap would help rectify this in the 3500 and 3800 MHz band, but would not eliminate Rogers’ significant overall spectrum advantage.
15. Essentially, contrary to Rogers’ submission which repeatedly reports inaccurate subscriber figures, each national carrier supports roughly 11 million customers and requires its commensurate share of mid-band 5G spectrum as facilitated by a cross-band cap.
16. In sum, contrary to Rogers’ comments, a cross-band cap **protects** the competitive landscape by restricting Rogers from holding the lion's share of prime mid-band spectrum and ensuring carriers are sufficiently provisioned with enough capacity to compete in the 5G marketplace.

***ISED should guarantee contiguity to encourage network builders to continue building the best networks in the world***

17. Large, contiguous mid-band channels are the foundation of 5G. 5G standards are designed to operate best in large contiguous channels. Given that mid-band spectrum in Canada is split across the 3500 MHz and 3800 MHz bands, guaranteed contiguity provides for the best outcome.

18. ISED has proposed two measures to support mid-band contiguity: guaranteed contiguity and a licence exchange mechanism with existing holdings where possible.
19. In our initial comments, TELUS supported both contiguity measures proposed by ISED, and almost all of industry also supports these measures as clearly in the public interest.

#### *Guaranteed contiguity*

20. Most of industry (TELUS, Bell, Comcentric, ECOTEL, Iristel, SaskTel, Sogetel, TECHNATION, Terrestar and Videotron) supports guaranteed contiguity across 3500 MHz and 3800 MHz. Rogers and Cogeco oppose guaranteed contiguity, despite the fact Rogers has benefitted from guaranteed contiguity in similar forms in both the 2500 MHz auction in 2015 and the recent 3500 MHz auction.
21. Promoting contiguity by assigning licensees adjacent spectrum blocks is a well-established Canadian policy. Mechanisms that guarantee contiguity have featured in almost all of Canada's recent auctions.<sup>4</sup> Notably, the 2500 MHz and 3500 MHz auctions included measures to guarantee contiguity between licensees' existing and auctioned blocks. Given that the 3500 MHz and 3800 MHz bands are the same band, the government must continue its longstanding policy; guarantees of contiguity both within the band and across the 3500 MHz and 3800 MHz bands should be provided wherever possible.

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<sup>4</sup> Namely, the 600 MHz, 700 MHz, 2500 MHz and 3500 MHz auctions.



### *Licence exchange mechanism*

22. The licence exchange mechanism is streamlined. It lets industry sort out contiguity after the auction more simply and quickly than by standard processes, with less administrative burden and quicker results for Canadians.
23. Most of the industry agrees with this perspective; this policy was widely endorsed, though ISED should play a role in helping industry coordinate exchanges.
24. The combination of guaranteed contiguity and a streamlined exchange mechanism ensure that network builders can deliver world class network performance, to the benefit of Canadians. TELUS' only critical remark is that guaranteed contiguity should apply in all licence areas, regardless of whether encumbered or not.
25. **TELUS continues to fully support both the proposed measures for guaranteed contiguity and the licence exchange mechanism.**

### *ISED should enforce strict deployment conditions to connect every Canadian*

26. Connecting all Canadians has become a key deliverable for the government.
27. This is clearly evident from the volume of submissions – largely from non-industry stakeholders – arguing that more stringent deployment conditions are required. From the National Chiefs Coalition to Pearson Education to the Jasper Tourism Association, the need for a use-it-or-lose-it spectrum policy is well recognised.
28. Further, the Minister's Mandate Letter sets the need for this policy out plainly. A detailed discussion of the approach, its benefits to Canadians, and implementation considerations for use-it-or-lose-it can be found in TELUS' response and reply to the Access Licensing

consultation<sup>5</sup>. ISED has the opportunity to issue the Access Licensing decision (following TELUS' recommendations) and the 3800 MHz auction consultation rapidly to deliver on this commitment.

29. With respect to the government's proposed deployment conditions for the 3800 MHz band, TELUS continues to believe they are adequate, but symmetric deployment conditions across national and regional operators would further support rural deployment. All carriers granted access to spectrum – especially in rural and remote communities – should understand that such a privilege involves the obligation to connect Canadians in a timely manner.
30. **TELUS continues to fully support the government implementing use-it-or-lose-it and also supports symmetric deployment conditions for all licensees.**

### ***Conclusion***

31. Given the vast majority of industry and non-industry stakeholder submissions recommend a cross-band cap, ISED should implement a cross-band cap in the 3800 MHz auction instead of a set-aside. Further, given the importance of contiguity and that virtually everyone in industry supports it, ISED should implement both policies to promote contiguity: guaranteed contiguity and the exchange mechanism. Finally, as

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<sup>5</sup> TELUS' comments and reply comments on *Consultation on New Access Licensing Framework, Changes to Subordinate Licensing and White Space to Support Rural and Remote Deployment*, Oct-Dec 2021.  
Comments link:  
[https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/SLPB-004-21-Rural-Deployment-Consultation-Stakeholder-Comments-Collection-Industry.pdf/\\$file/SLPB-004-21-Rural-Deployment-Consultation-Stakeholder-Comments-Collection-Industry.pdf](https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/SLPB-004-21-Rural-Deployment-Consultation-Stakeholder-Comments-Collection-Industry.pdf/$file/SLPB-004-21-Rural-Deployment-Consultation-Stakeholder-Comments-Collection-Industry.pdf), pp.371-411.  
Reply comments link:  
[https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/SLPB-004-21-TELUS-Reply-Comments.pdf/\\$FILE/SLPB-004-21-TELUS-Reply-Comments.pdf](https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/SLPB-004-21-TELUS-Reply-Comments.pdf/$FILE/SLPB-004-21-TELUS-Reply-Comments.pdf)

stakeholders propose, ISED should implement “use-it-or-lose-it” policies to ensure carriers use the spectrum they buy to connect Canadians.

32. As TELUS set out in our initial comments, if ISED selects the right options in the consultation – a cross-band cap, guaranteed contiguity, and measures to encourage rural deployment, as recommended by TELUS and many others – the government will be able to achieve its goals to facilitate the construction of competitive, high quality 5G networks and more quickly connect all Canadians.
33. TELUS’ comments in reply to the comments from industry, stakeholders, and rightsholders follows in the main body of this document.

## TELUS' Comments on Specific Questions Posed by ISED

### Q1: Coexistence with radio altimeters

**Q1.** ISED is seeking comments on its proposal to extend the mitigation measures described in SRSP-520 to protect radio altimeters from flexible use operations in the 3500 MHz band to flexible use operations in the 3800 MHz band (3650-3900 MHz). This extension is proposed until domestic and international studies are completed.

34. As noted in its initial comments, TELUS appreciates that ISED has chosen to address this technical issue in a consultation that otherwise completely focuses on auction design (policy and licensing). As critical mid-band spectrum that will underpin the next two decades of 5G competition, the rules around the use of the 3800 MHz band must be made clear to auction participants well before bidding begins; the importance of bidders having this clarity before the auction is supported by comments from Bell, Rogers, SaskTel, and ECOTEL.
35. TELUS noted in its response that ISED's question appears to presuppose that international and domestic studies to assess what measures (if any) are required to protect radio altimeters from flexible use operations in 3800 MHz won't be completed before this band is licensed for flexible use. The same can be said of some respondents (Comcentric, ECOTEL, Terrestar, DND, Joint Aerospace Industry stakeholders and Joint Airline Industry stakeholders) who nominally support ISED's proposal, but appear to do so not necessarily because of the merits of the protection measures themselves but as a temporary precaution until additional studies are completed. Given recent progress in the U.S. (where the FAA has approved over 90% of aircraft models to perform low-visibility

landings at most airports in the presence of 5G deployments in C-band<sup>6</sup>) and the ongoing efforts at the RABC between 5G stakeholders (including flexible-use licensees and equipment manufacturers), the aviation sector, ISED and Transport Canada, TELUS still believes that it is reasonable for such studies to be concluded prior to the 3800 MHz auction in early 2023. Rogers<sup>7</sup> supports this timeline and Bell<sup>8</sup> goes a step further by suggesting that a plan should be in place to replace poorly performing altimeters before the start of the auction.

36. In their comments, SaskTel<sup>9</sup> acknowledges the importance of auction participants having certainty on restrictions and encumbrances on the use of the spectrum before the auction begins, and that licence conditions must be “*based on scientific evidence, reasonable assumptions, validated test results, and international standards.*” TELUS supports these principles, but not SaskTel’s proposal to delay the 3800 MHz auction until such studies are completed. TELUS believes that, in light of the progress made in the US, this is a false dichotomy and that a delay of the auction is not necessary. Furthermore, delaying the auction will negate the possibility of early clearance of the 3800 MHz band, which would accelerate access to much needed mid-band spectrum.
37. Comments by Air Canada and Westjet in support of ISED’s proposal indicate that current Low Range Radio Altimeter (LRRRA) systems were designed to standards that are 40-50 years old, and that “*development of new standards that would address these risks (...) and subsequent integration into the existing airline fleet, will take many years.*” TELUS

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<sup>6</sup> Link: <https://www.faa.gov/5g>

<sup>7</sup> Rogers’ response to the Consultation, Paragraph 67.

<sup>8</sup> Bell’s response to the Consultation, Paragraph 28.

<sup>9</sup> SaskTel’s response to the Consultation, Paragraph 4.

submits that this is another reason why doing the work to ensure such critical systems can safely operate in a complex multi-user spectrum environment must be prioritised starting with an evidence-based assessment of the risks.

38. After reviewing comments submitted by other parties, TELUS maintains that, if after completion of domestic and international studies, any mitigation measures are deemed to be required in 3800 MHz, such measures as applied to the 3800 MHz band must be:

- a. Time-limited, with a defined and reasonable term sunset date that takes into account the importance of 5G deployments. Time-limited mitigation measures should extend no later than March 2025, reflecting the FSS and urban WBS transition timelines that will dictate when 3800 MHz spectrum can be broadly deployed, but the ideal sunset date should be targeted for mid- to late-2023 to account for potential accelerated WBS/FSS clearance and early deployment following the auction; a similar timeline is indicated in comments from Bell.
- b. Minimally intrusive, by limiting flexible use only where risk to aviation can be clearly demonstrated; and
- c. Include a burden of responsibility upon the aviation sector to modernise their equipment to create a sustainable end state, and to cease relying on equipment that fails to account for the multi-user spectral environment.

## Q2: Consolidated gateway sites

**Q2.** ISED is seeking comments on its proposal to not identify additional consolidated gateway sites other than those already identified in the 3800 MHz Decision in Weir, Quebec and Allan Park, Ontario.

39. TELUS supports ISED’s proposal to not identify additional consolidated gateway sites other than those already identified in the 3800 MHz Decision in Weir, Quebec and Allan Park, Ontario. TELUS notes that this proposal is broadly supported (BCBA, Bell, CanWISP, ECOTEL, Iristel, Rogers, Videotron, Xplornet); only SSI<sup>10</sup> disagrees due to the impact to displacement of operations at its Ottawa gateway site. In its initial comments, TELUS expressed its strong agreement with ISED’s decision to reject the proposals to protect satellite gateways in Montreal and Ottawa, as ongoing protected operations of these sites would create significant constraints on the operation of flexible use networks in 3700-3900 MHz spectrum. TELUS maintains that despite SSI’s concerns, this displacement is still a necessary consequence of repurposing the spectrum to make it fully usable in these major urban markets.
40. TELUS also appreciates the clarity offered by ISED by stating that “*the protection of operations in the 3700-4000 MHz band at these sites will only continue until the end of life of existing satellites.*” TELUS expects that this means that at some point in the not-too-distant future, as FSS use in general continues to decline, use of the 3700-4000 MHz frequency range for satellite services will come to an end and encumbered service areas will become fully unencumbered. This “unencumbering” may presumably take

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<sup>10</sup> SSI’s response to the Consultation, Paragraphs 29-37.

place sooner for satellite-dependent areas (if/when all existing sites choose to transition to operations in the 4000-4200 MHz frequency range), but the protection of consolidated gateways would certainly cease to be required once all satellites authorised in 3700-4000 MHz are no longer operating.

41. The areas surrounding Allan Park, ON and Weir, QC are quite different in nature; the encumbrance induced by protection requirements for these two gateways is also presumably quite different. Allan Park is relatively flat but is located in the middle of a low-density (rural) region of Southwestern Ontario. In contrast, Weir is located in the Laurentians in relatively close proximity to medium and large population centres (including Montreal), but is naturally shielded from them all.
42. ISED has not been clear in this Consultation as to what criterion it has used to assess encumbrance – understandably so, as the technical rules to enable coexistence between flexible use and protected satellite earth stations have yet to be determined in the appropriate SRSP and RSS standards. However, without guidance as to the methodology used by ISED to determine the indicative values for encumbrance used to classify Tier 4 areas as encumbered in Annex A, it is difficult to meaningfully comment on the specific recommendations. TELUS notes that ECOTEL<sup>11</sup> and Iristel<sup>12</sup>, both here and in response to Question 13, assert the need for bidders to understand the requirements that coordination or protection of consolidated gateways will impose in order to appropriately prepare valuations before the auction; TELUS supports this view.

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<sup>11</sup> ECOTEL's response to the Consultation, Paragraph 24.

<sup>12</sup> Iristel's response to the Consultation, Paragraph 23.



43. With remaining uncertainty around these specific technical requirements in mind, TELUS repeats its recommendation from its initial and reply comments to the 3800 MHz Repurposing Consultation – that ISED should “*only allow consolidated gateways to be sited in locations that meet a low population impairment criteria and at the very least, do not constrain the deployment of flexible use systems in metropolitan and urban Tier 5 service areas (i.e., those which contain large or medium population centres).*” Given that ISED studied protection measures for the Weir earth station in the 3500 MHz band, and concluded that no such coordination would be required in the nearby medium and large population centres, TELUS assumes that similar rules should apply in 3800 MHz.
44. TELUS offers further recommendations on the determination of encumbrances (including for service areas near consolidated gateways) following the update of the SRSP standard in its response to Question 13.

### **Q3: Tier 4 service areas**

**Q3.** ISED is seeking comments on its proposal to use Tier 4 service areas for the 3800 MHz licensing process.

45. TELUS supports ISED’s proposal to use Tier 4 service areas for the 3800 MHz licensing process. 3500 MHz was originally licensed using Tier 4 service areas, and was predominantly<sup>13</sup> auctioned on the same basis.

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<sup>13</sup> Deviations from Tier-4 boundaries in the 3500 MHz auction process arose only due to historical subdivisions and first-come/first-served grid cell licensing, leading to some partial tier and encumbered licences.

46. The 3500 MHz and 3800 MHz bands are nearly identical in almost every manner, sharing a common ecosystem, indistinguishable RF characteristics (i.e., propagation and penetration), and an anticipated set of similar use cases.
47. TELUS notes that ISED has included several proposals in this Consultation that benefit from or depend on using Tier 4 area licensing.
48. For instance, the proposed Tier-4 based deployment requirements, which are broadly aligned with the 3500 MHz deployment requirements, could be met efficiently using deployments that span both 3500 MHz and 3800 MHz band spectrum.
49. Another important reason to align licensing to the Tier 4 service area is to facilitate the use of ISED's proposed cross-band cap, which TELUS contends is necessary to ensure a sufficiently competitive distribution of mid-band TDD spectrum required for the provision of 5G services.
50. TELUS notes that most respondents (Bell, Eastlink, Iristel, Rogers, SaskTel, Sogetel, Terrestar, Videotron and Xplornet) support the use of Tier 4 service areas for the 3800 MHz auction. Many of these parties indicate that larger service areas (i.e., Tier 2 or Tier 3) would generally be preferable to minimise interference or coordination challenges, but support Tier 4 for the same reasons as TELUS (e.g., administrative consistency, efficiencies and synergies in deployment, facilitating future swaps, etc.).
51. While Cogeco<sup>14</sup> generally supports the use of Tier 4 service areas for the 3800 MHz auction, it also repeats its call for the division of Canada's three largest metropolitan markets (Toronto, Montreal and Vancouver) into their constituent Tier 5 service areas (as

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<sup>14</sup> Cogeco's response to the Consultation, Paragraphs 10-21.

it has in previous licensing framework consultations). ISED should reject this proposal, not only to preserve consistency between 3500 MHz and 3800 MHz licences as discussed above, but also because TELUS strongly disagrees with Cogeco's assertion that a collection of interference mitigation techniques (including increasing downtilt, decreasing antenna height, reducing power and orienting sectors away from Tier 5 boundaries) would "[lead] to an optimal performance of the adjacent wireless networks." On the contrary – imposing such restrictions on wireless networks at some of the most densely populated Tier 5 boundaries in the country would lead to inefficient and suboptimal network performance within these key markets.

52. Some of the WISPs (BCBA, CanWISP, Comcentric and ECOTEL) propose the use of Tier 5 service areas to allow smaller providers to bid on spectrum better suited for their particular business cases. None sufficiently addresses ISED's concern regarding the tradeoff between higher power deployments and interference challenges; CanWISP<sup>15</sup> dismissively states that it "*disagrees with ISED's assessment*" and that "*an increasing in co-ordination requirements is a reasonable trade-off*." The challenge associated with introducing additional borders (i.e. using Tier 5 service areas rather than Tier 4) is not merely an operational one of increased coordination. When a licensee has different blocks licensed across adjacent service areas, it must adjust its network design (including sector azimuths, elevations, and transmitted power) to comply with power flux density (PFD) limits at the boundary. As a result, the benefits of higher power (such as ubiquitous coverage) is negatively impacted near these boundaries. TELUS agrees with Rogers'<sup>16</sup>

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<sup>15</sup> CanWISP's response to the Consultation, Paragraphs 25-28.

<sup>16</sup> Rogers' response to the Consultation, Paragraph 74.

recommendation to only consider Tier 5 licensing for bands above 6 GHz (including mmWave bands) and that subordination, light licensing (such as the future 80 MHz WBS band) and licence-exempt spectrum can serve use cases at sub-Tier-4 levels.

#### **Q4: Use of pro-competitive measures**

**Q4.** ISED is seeking comments on its proposal to implement pro-competitive measures in the 3800 MHz auction.

53. TELUS supports ISED's proposal to implement pro-competitive measures in the 3800 MHz auction to complete the allocation of 3450-3900 MHz. A cross-band cap is essential to maintain a competitive post auction 5G market structure given Canada's mid-band TDD spectrum landscape after the 3500 MHz auction.
54. Almost every respondent to the Consultation who answered this question supports the use of a cross-band cap for the auction of the remaining balance of the 3450-3900 MHz band (CanWISP, Cogeco, Comcentric, Eastlink, ECOTEL, Exolink, Iristel, Sogetel, Terrestar, Videotron). Only a few respondents oppose the use of a cross-band cap and unsurprisingly they are the few licensees with significant 3500 MHz band spectrum in their operating territories (Rogers, Bell, SaskTel and Xplornet).
55. TELUS' call for the use of pro-competitive measures by way of a cross-band cap is based on the asymmetry in pre-auction NMSP<sup>17</sup> holdings in this band and should not be understood as TELUS suggesting that the Canadian wireless market is insufficiently

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<sup>17</sup> For consistency with ISED's language used in the Consultation, TELUS uses the term NMSP (national mobile service provider) to refer to TELUS, Bell and Rogers in its response.

competitive. On the contrary, expert reports<sup>18,19,20</sup> have repeatedly found the Canadian market to be highly competitive, both intrinsically and compared to other jurisdictions. In designing pro-competitive measures for the 3800 MHz auction, ISED must consider the important role that a balanced distribution of 5G mid-band spectrum will play in sustaining healthy competition in the Canadian wireless marketplace while 5G networks are in their infancy and that investment remains paramount given the long term impacts on competitiveness vis a vis the world stage.

56. In Paragraph 43 of the Consultation, ISED states: *“There is a risk that competition in the post auction marketplace could be affected without measures to facilitate access to spectrum for service providers **other than the three NMSPs**. ISED is of the view that larger service providers likely have the means and incentive to prevent other service providers, **in particular smaller ones**, from acquiring spectrum licences in an open auction.”*
57. This statement should not be focused only on *“service providers **other than the three NMSPs**”*, but on all service providers, including TELUS. The last two spectrum auctions (600 MHz and 3500 MHz) illustrate that ISED’s concern about potential foreclosure is too narrow in scope. In these two auctions (both using a set-aside but no spectrum cap), one NMSP already holding the most spectrum by some measure and serving c.31% of the

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<sup>18</sup> Crandall, R, *An Analysis of the Performance of the Canadian Mobile Wireless Industry*, 2019. Link: <https://services.crtc.gc.ca/pub/DocWebBroker/OpenDocument.aspx?DMID=3647663>

<sup>19</sup> Dippon C, *An Accurate Price Comparison of Communications Services in Canada and Select Foreign Jurisdictions*, 2018. Link: <https://services.crtc.gc.ca/pub/DocWebBroker/OpenDocument.aspx?DMID=3647664>

<sup>20</sup> GSMA, *5G and economic growth: An assessment of GDP impacts in Canada*, 2020. Link: <https://data.gsmaintelligence.com/api-web/v2/research-file-download?id=54165916&file=051120-5G-in-Canada.pdf>

subscribers in Canada has won 72% of the NMSP accessible 600 MHz spectrum (2019) and 44% of the NMSP-accessible spectrum in the 3500 MHz auction (despite having a 30 MHz headstart<sup>21</sup>).

58. Both Rogers and Bell were clearly motivated to maintain the spectrum advantage they each held going into the 3500 MHz auction as a result of the 3500 MHz transition decision. Of the 200 MHz now allocated between 3450-3650 MHz, 131 MHz is held by NMSPs, but the respective holdings of each NMSP are not the same. Of note, Rogers holds 45% (58 MHz), Bell 37% (48 MHz) and TELUS 19% (25 MHz) – post-auction spectrum shares that very closely resemble the pre-auction spectrum shares<sup>22</sup>. Despite bidding to extremely high prices to try to close this significant gap, TELUS was only able to acquire 16 MHz in the 3500 MHz auction. If the same rules (a set-aside and no cap) were to be used in the upcoming 3800 MHz auction, TELUS would undoubtedly once again face severe bidding pressure from the other NMSPs, who are incented to preserve their strategic advantage in this crucial 5G mid-band spectrum asset for which no substitute exists, either today or for the foreseeable future. The bidding dynamics and ultimately the outcome of the auction would be the same: Canada would see an unbalanced distribution of 5G mid-band spectrum while the auction would once again reach world record spectrum prices.
59. This inevitable outcome (should ISED not implement the proposed cross-band cap) would be highly detrimental to broadband competition in Canada. It would drive

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<sup>21</sup> Both Rogers and Bell through their Inukshuk / Orion Wireless Partnership were each granted a national average c.30 MHz of transitioned 3450-3650 MHz 5G spectrum via the 3500 Transition Decision. Regional operators including SaskTel were given protected access to a 50 MHz set aside. Link to data: <https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11722.html>

<sup>22</sup> Prior to the 3500 MHz auction, Rogers held 45% (30 MHz), Bell 42% (29 MHz) and TELUS 12% (8 MHz).

disparities in network coverage and quality which in turn would impact market shares and margins.

60. Industry wide, on the heels of a \$9 billion 3500 MHz leftovers<sup>23</sup> auction, without aggregation limits, the undoubtedly high cost of more than twice as much 3800 MHz spectrum will result in far less capital to deploy mid-band TDD as quickly and as deeply as possible into the rural markets for the benefit of Canadians.
61. As regulators around the world all recognise, a cap can create an effective set-aside and thus serves two purposes without any subjective favouritism. A cap creates an effective set-aside of spectrum for non-NMSPs *and* it facilitates a balance amongst NMSPs.<sup>24</sup>

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<sup>23</sup> The 3500 MHz leftovers auction was for 111 MHz, almost half set aside. The 3800 MHz auction is for 250 MHz.

<sup>24</sup> Analysys Mason, *Pro-competitive measures and coverage obligations in mid-band auctions*, published February 2022. Link: <https://www.analysysmason.com/consulting-redirect/reports/procompetitive-coverage-midband/>

## Q5: ISED's proposed options for pro-competitive measures

**Q5.** If adopted, ISED is seeking comments on three proposals for pro-competitive measures in the 3800 MHz auction. Three options are proposed:

- Option 1: a 50 MHz set-aside
- Option 2: a 100 MHz cross-band cap across the 3500 MHz and 3800 MHz bands or
- Option 3: a 50 MHz set-aside and 100 MHz cross-band cap across the 3500 MHz and 3800 MHz bands

62. If competitive measures were adopted and if the proposed options were the only ones, then:

- a. Rogers, SaskTel and Xplornet would support Option 1 to avoid a cross-band cap given their already extensive in-territory 3500 MHz holdings.
- b. TELUS, Bell<sup>25</sup> and the only academics<sup>26</sup> to respond would support Option 2 because it facilitates an even distribution of a scarce resource.
- c. The balance of respondents, each one of whom is a set-aside beneficiary, all call for Option 3 or some enlarged variation thereof.

63. Essentially, only three respondents out of dozens were opposed to a cross-band cap.<sup>27</sup> Thus, on balance, the record to date supports ISED implementing Option 2 at a minimum.

64. TELUS opposes Option 3 because layering a set-aside on top of a cap only serves to introduce distortions to auction dynamics and outcomes (e.g., asymmetric pricing

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<sup>25</sup> Bell's response to the Consultation, Paragraphs 6, 48-52.

<sup>26</sup> McNally and Joseph's response to the Consultation, Paragraphs 12-13.

<sup>27</sup> Beyond TELUS, Bell, and McNally and Joseph that support Option 2, the vast majority of set-aside beneficiaries (CanWISP, Cogeco, Comcentric, Eastlink, ECOTEL, Exolink, Iristel, Sogetel, Terrestar, and Videotron) all support the use of a cross-band cap via Option 3.



outcomes and spiteful “gaming” bidding) while doing little to help achieve the government’s “pro-competitive” objectives:

- a. A 100 MHz cross-band cap already creates a larger effective set-aside than an explicit 50 MHz set-aside does, reserving *more* than 50 MHz for regional and rural operators in 76% of the country (and exactly 50 MHz in 6% of the country)
  - b. A 100 MHz cross-band cap still reserves on average 34 MHz of effective set-aside spectrum for regional and rural operators in the remaining 18% of the country where regional and rural operators already hold the majority<sup>28</sup> of the 3500 MHz band
  - c. It is the cap and not the set-aside that enforces a fifth licensee per region in order to support *both* regional and rural operators in this flexible use band.
65. In the following paragraphs, TELUS rebuts the arguments of those against the cross-band cap as well as those who recommend Option 3 and variations thereof.

***A cross-band cap is necessary***

66. SaskTel and Xplornet are the only two set-aside beneficiaries not in favour of a cross-band cap.
67. SaskTel<sup>29</sup> has exactly 50 MHz of 3500 MHz spectrum in over 90% of Saskatchewan by pops and recommends a 50 MHz 3800 auction cap. In other words, in over 90% of Saskatchewan, SaskTel’s recommended cap would have the exact same effect on SaskTel as the proposed 100 MHz cross-band cap. TELUS critiques SaskTel’s ineffective

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<sup>28</sup> Regional and rural operators hold on average 116.3 MHz of the 3500 MHz band (i.e., 58% of the 200 MHz wide band) in these areas.

<sup>29</sup> SaskTel benefitted from a 50 MHz set-side in the 3500 MHz auction to secure between 50 and 85 MHz in the province including open 3500 MHz spectrum.

proposal in its response to Question 6 but would suggest that ISED should not give any weight to SaskTel's opposition to the cross-band cap.

68. Xplornet<sup>30</sup> provides limited reasoning for their opposition to a cross-band cap other than declaring that 100 MHz is a minimum requirement for 5G. They support the Option 1 50 MHz cap but insist<sup>31</sup> that “*without a set-aside, rural broadband providers would be excluded from obtaining spectrum.*” They fail to acknowledge that the cross-band cap provides a larger effective set-aside than an explicit 50 MHz set aside. Their opposition to a cross-band cap is presumably based on the extent of their holdings. Xplornet is one of only two<sup>32</sup> licensees that hold greater than 100 MHz in some areas and stand to be grandfathered over the cap. Xplornet has an average of 49 MHz in its 3500 MHz spectrum portfolio and thus has ample head room under the cross-band cap to bolster said portfolio.
69. Rogers is the only NMSP opposed to a cross-band cap. Rogers suggests that a cross-band cap is “*wildly anti-competitive*”. In the same paragraph that Rogers makes this claim, it asserts that spectrum share should be in line with subscriber share: “*There is no justification why the Bell-Telus joint network (which combined only has about half again as many customers as Rogers) should effectively be gifted with the opportunity to assemble and benefit from 200 MHz of mid-band spectrum while the Rogers and other*

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<sup>30</sup> Xplornet retained almost 80% of its FWA spectrum through the 3500 MHz transition decision and post 3500 MHz auction holds almost a billion MHz-pops (an average of 49 MHz across 153 of Canada's 172 Tier 4 service areas).

<sup>31</sup> Xplornet's response to the Consultation, Paragraph 19.

<sup>32</sup> Xplornet holds 110 MHz of unencumbered or nearly unencumbered spectrum in four Tier 4 service areas, and a mix including encumbered spectrum in two other Tier 4 service areas. SaskTel holds 110 MHz and 120 MHz of 3500 MHz spectrum in Estevan and Weyburn, respectively, although only 50 MHz of SaskTel's spectrum is unencumbered.

*networks are limited to 100 MHz.*” Rogers clearly acknowledges<sup>33</sup> that subscriber market share is “*a proxy for network capacity demand*” again in its Paragraph 42.

70. Rogers, however, quotes incomplete and/or inaccurate subscriber data to make its points. Rogers also fails to consider in its arguments the spectrum holdings underpinning an operator’s subscriber share. Throughout its submission (in paragraphs 34, 42, 85, 87, 124 and 148) Rogers reports a subscriber ratio of 1 to 1.6 for Rogers versus TELUS and Bell, relying on 2021Q3 subscriber statistics cited from a recent CWTA<sup>34</sup> study. However, the subscriber ratio calculated by Rogers is based on an incomplete set of data; Rogers omits the millions of connected devices supported by TELUS – despite the statistic being readily available in the same CWTA reference. (Rogers does not break out M2M/IoT subscribers in its financial disclosure). TELUS’ connected devices include tablets that consume significant capacity – as much, or more than smartphones. TELUS’ IoT service offerings<sup>35</sup> span a diverse set of industries (including Intelligent Transportation Systems (ITS), healthcare and smart cities). The use cases addressed today within those enterprise segments are highly demanding on network capacity (e.g., video streaming for CCTV asset monitoring and remote patient care, collection and aggregation of vast data sets from remote sensors, etc.)
71. The reality is that both TELUS and Bell each individually support more subscribers than Rogers does according to the financial disclosure of the three NMSPs from December 31,

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<sup>33</sup> Rogers’ response to the Consultation, Paragraph 42.

<sup>34</sup> *Industry Statistics: Wireless Subscriber Numbers*, CWTA, November 2021.

Link: <https://www.cwta.ca/wp-content/uploads/2021/11/Sub-Stats-2021-Quarter-3-EN-Web.pdf>

<sup>35</sup> Link: <https://www.telus.com/business/medium-large/enterprise-solutions/internet-of-things>

2021.<sup>36</sup> Based on this complete set of customer data, a 100 MHz cross-band cap still marginally favours Rogers, providing Rogers with more capacity in terms of “3X00” MHz per subscriber than Bell or TELUS as shown below.

72. Figure 1 illustrates the relative spectrum capacity available to Rogers, TELUS, Bell and the collection<sup>37</sup> of regional and rural operators. It looks at *spectrum capacity ratio*<sup>38</sup> – a relative measure of operator spectrum share<sup>39</sup> to operator market share<sup>40</sup>. A spectrum capacity ratio of more than 1 indicates that an operator is relatively overprovisioned with spectrum when compared to its subscriber base in a market (conversely, a spectrum capacity ratio of less than 1 indicates a relatively underprovisioned operator).
73. Figure 1 illustrates this relative spectrum capacity metric on a national basis, both in the 3500 MHz band (with 200 MHz of allocated spectrum today) and prospectively following the 3800 MHz auction (with 450 MHz of allocated spectrum), if Bell, Rogers and TELUS were each to succeed in acquiring spectrum up to an Option 2 100 MHz cross-band cap in all service areas. The result illustrates that the severe imbalance today would be moderated with the proposed cross-band cap. Rogers would remain with

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<sup>36</sup> Collected individually from Bell, Rogers and TELUS year end financial reports, and validated vs. CWTA’s February publication based on the same sources, confirming TELUS at 11.4M subscribers (9.29M mobile + 2.134M connected devices), Bell at 11.7M subscribers (9.46M mobile + 2.25M connected devices) and Rogers at 11.3M subscribers:

Link: [https://www.cwta.ca/wp-content/uploads/2022/02/Sub-Stats-2021-Quarter-4-EN-Devices\\_Web.pdf](https://www.cwta.ca/wp-content/uploads/2022/02/Sub-Stats-2021-Quarter-4-EN-Devices_Web.pdf)

<sup>37</sup> The total subscriber count for this aggregation of regional and rural operators is not readily available; however, the sum total from the CWTA’s 2021 Q4 report is 4.4M subscribers (Freedom @ 2.2M, Videotron @ 1.6M and SaskTel @ 0.6M). In Figures 1 and 2 below, TELUS estimates the total at 5.5M total subscribers, estimating just over 1 million subscribers for Eastlink, TBayTel, Xplornet and other WISP customers.

<sup>38</sup> Spectrum capacity ratio = (Operator spectrum share) / (Operator market share). By normalising both spectrum share and market share, the spectrum capacity ratio can be readily compared across current and future spectrum allocations in a region.

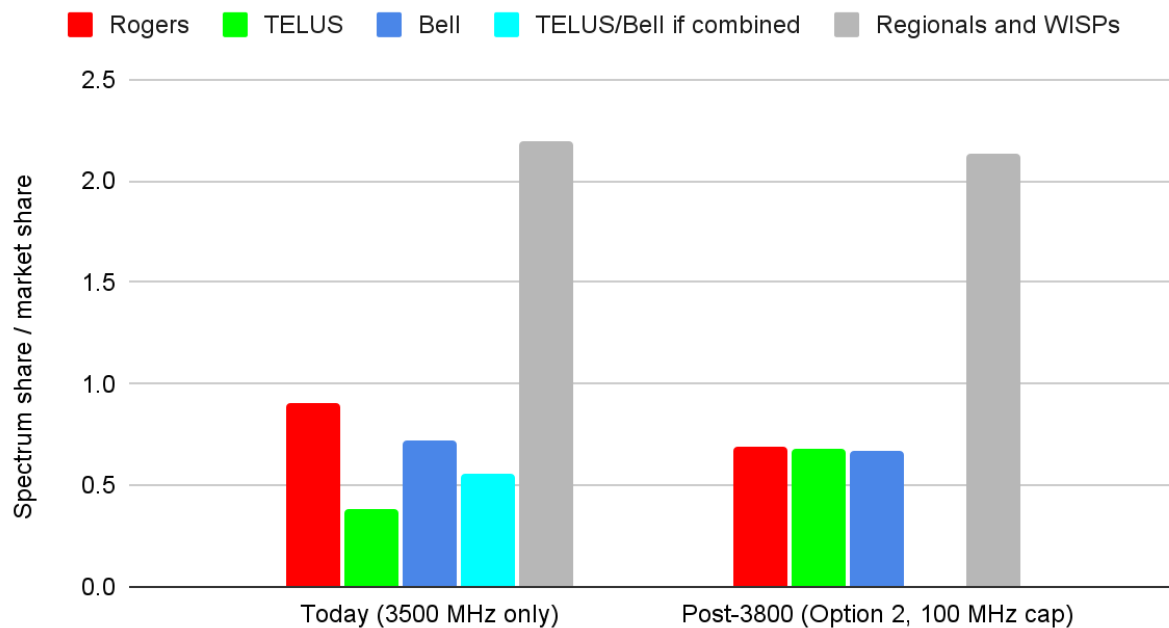
<sup>39</sup> Operator spectrum share = (MHz of spectrum licensed to operator) / (Total MHz of spectrum allocated)

<sup>40</sup> Operator market share = (# of subscribers served by operator) / (# of subscribers in market under analysis)

marginally more “3X00” capacity than Bell or TELUS, but the playing field would effectively be levelled between NMSPs.

**Figure 1: National spectrum capacity ratio in 3500/3800 MHz spectrum<sup>41</sup>**

### National spectrum capacity ratio (3500/3800 MHz bands)

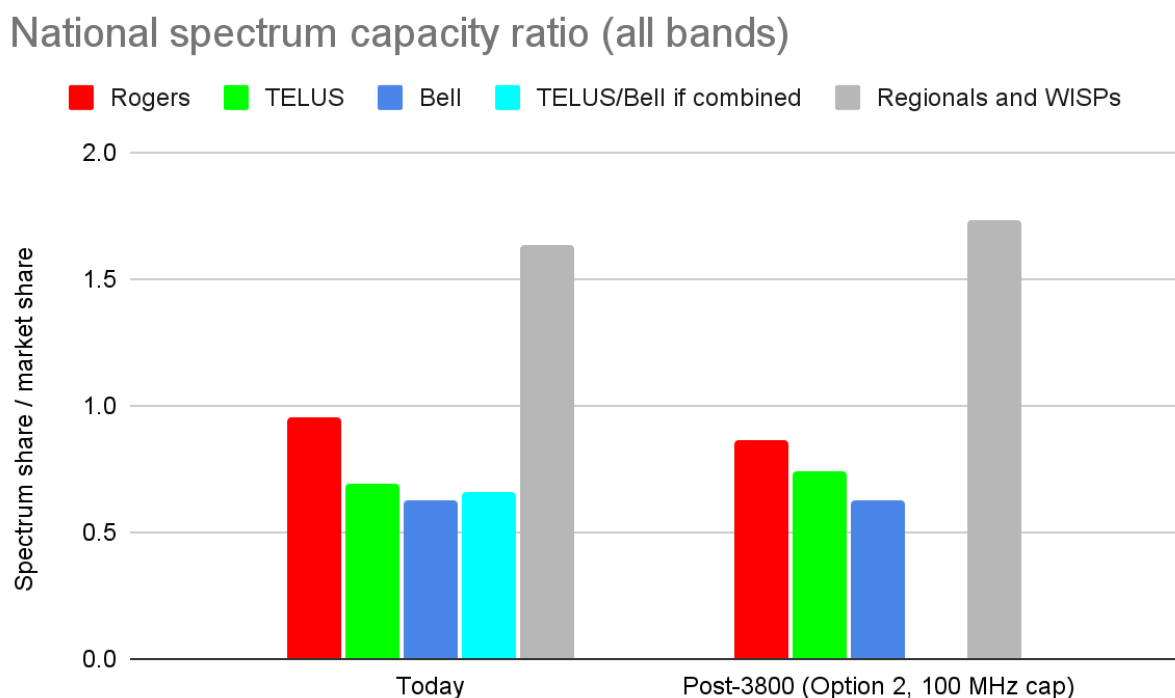


74. While Figure 1 illustrates how a 100 MHz cross-band cap would help create a more balanced “3X00” spectrum distribution that would provision spectrum capacity to NMSPs in a way that appropriately supports balanced competition, looking at the 3500 and 3800 MHz bands alone does not tell the whole story. Rogers neglects to address the historical spectrum advantage that Rogers has held and which TELUS has raised in all previous

<sup>41</sup> In order to address Rogers’ focus on TELUS and Bell, Figures 1-3 include a notional “TELUS/Bell if combined” capacity ratio for completeness. This in fact over-represents the combined spectrum capacity currently available to the aggregate set of all TELUS and Bell subscribers, as TELUS and Bell do not share all of their spectrum. It is noteworthy that spectrum capacity ratios are not additive; the notional combination of TELUS and Bell spectrum capacity is an average, and not a sum of capacities. In other words, spectrum sharing does not create any new capacity.

auction consultations. Figure 2 illustrates this marked advantage using the same assumptions as above, but accounting for today’s spectrum holdings across all 918 MHz of allocated spectrum (and a hypothetical post-3800 scenario with 1168 MHz of allocated spectrum). This figure illustrates the misleading nature of Rogers’ limited focus on “3X00” spectrum, given the relatively high spectrum capacity ratio Rogers holds today relative to TELUS and Bell.

**Figure 2: National spectrum capacity ratio in all spectrum bands**



75. Finally, TELUS addresses Rogers’ response<sup>42</sup> where it cherry-picks data from the Ontario market to make a “critical” point. Rogers highlights a region where TELUS and Bell have smaller relative subscriber shares than Rogers. Rogers bases its analysis on the 2021

<sup>42</sup> Rogers’ response to the Consultation, Paragraph 42.

CRTC Communications Monitoring Report<sup>43</sup> showing TELUS at 22% and Bell at 31% market share in Ontario adding up to 53% compared<sup>44</sup> to Rogers at 45% mobile subscriber share. Rogers fails to acknowledge that this subscriber share is supported in Ontario by commensurate spectrum holdings: TELUS today only has 160 MHz of spectrum vs. Bell's 228 MHz and Rogers 302 MHz. Thus Rogers is not advantaged or disadvantaged in Ontario but reasonably provisioned.

76. On the other hand, Rogers is overprovisioned everywhere other than Ontario. Figure 3 illustrates the current spectrum capacity ratios in the largest provincial markets including Ontario. Since provincial subscriber counts are not disclosed in operators' financial reports, Figure 3 makes use of the same CRTC Communications Market Report that Rogers relies on to determine provincial market share data<sup>45</sup>. The result is apparent – Rogers highlighted Ontario because it is the only market in which Rogers's line of reasoning (which TELUS has debunked above) might have been perceived to be valid. The reality is that in BC and Quebec, the situation is skewed in Rogers' favour, while in Alberta, Rogers enjoys more than twice the spectrum capacity of either TELUS or Bell. Rogers' spectrum overprovisioning is even more pronounced in the Atlantic provinces (not shown in the figure for axis scale reasons, but included in Annex A).

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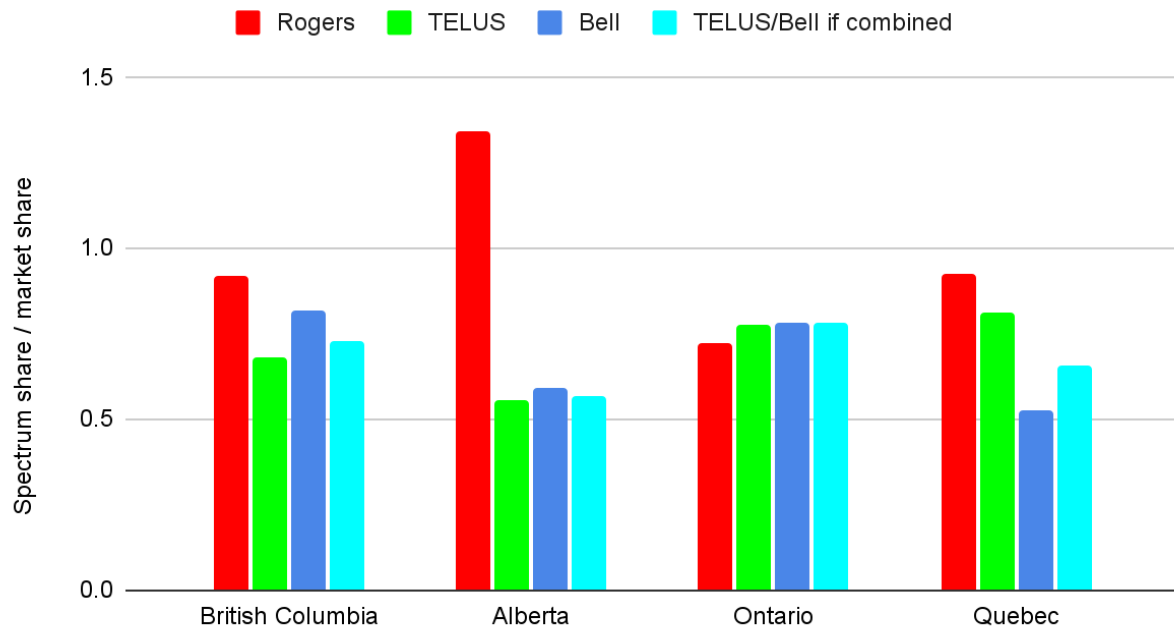
<sup>43</sup> Now called the Communications Market Reports. TELUS believes Rogers is making reference to the "Retail mobile" data, Figure 5 (Provincial/territorial subscriber market share of Bell, TELUS, Rogers and other providers (%), 2013-2020". Link: <https://crtc.gc.ca/eng/publications/reports/PolicyMonitoring/cmrd.htm>

<sup>44</sup> Errata: Rogers Paragraph 42 incorrectly states that Bell and TELUS "combined only serves 7% more customers" when they should have said 18.5% more customers than Rogers (i.e., 0.532 TELUS and Bell subscribers for every 0.449 Rogers subscribers is a ratio of 1.185:1).

<sup>45</sup> Regional and WISP providers are omitted as the CRTC data does not include Shaw, Eastlink, or fixed wireless subscribers. As such, relative subscriber shares between LWSPs are used to calculate capacity ratios in Figure 3, and thus Figure 3 is not directly comparable to Figures 1 and 2. Additionally, subscriber counts in the CRTC's provincial market shares used in Figure 3 are based on "mobile phone services" only (and not connected devices) and thus likely underestimate TELUS and Bell subscriber market share versus Rogers.

**Figure 3: Provincial spectrum capacity ratio in all spectrum bands**

### Provincial spectrum capacity ratio (all bands)



77. Highlighting the regional differences in spectrum capacity between operators at the provincial level is illuminating. Under-provisioned operators must attempt to compensate with network density. At the provincial level, Rogers is generally overprovisioned compared to its rivals, with Ontario being a province where Rogers is adequately provisioned. As a result, Rogers already enjoys a significant spectrum capacity advantage at the national level. As such, the 100 MHz cross-band cap is anything but “*wildly anti-competitive*” as Rogers proclaims.

#### ***The proposed cross-band cap is sufficient***

78. There is a disparity in NMSPs holdings that drives the need for a cross-band cap to facilitate post auction competition and support investment. A cross-band cap is supported



by TELUS, academics and almost all set-aside beneficiaries as noted in response to Question 4. Bell is not opposed and SaskTel proposes a measure that gives them what the cross-band cap provides. The proposed cross-band cap puts more spectrum into the hands of regional and rural operators than the proposed set aside. There is no need for the set-aside.

79. Table 1 below displays the impacts of ISED's proposed three options in terms of how much spectrum is segregated and made inaccessible to NMSPs – in other words, the *effective* set-aside<sup>46</sup>. The 172 Tier 4 service areas all have varying spectrum distributions between the NMSPs and the regional and rural operators. In very general terms, NMSPs and regional operators have more spectrum in urban markets and rural operators' spectrum is more focused in rural markets. This means that the size of the effective set-aside created by a cap in each region varies. As demonstrated below, Option 2 provides 36 MHz more effective set-aside than Option 1 and, unlike Option 1, guarantees at least 150 MHz in every market for regional and rural operators. A reduction in NMSP accessible spectrum at auction is acceptable in order to achieve a balanced competitive outcome and reasonable spectrum pricing.

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<sup>46</sup> Set-asides, as implemented by ISED, have almost always been explicit. Caps create implicit set asides. For example, with 3 NMSPs, anything above 3x the cap is effectively set aside.

**Table 1: Impact of Proposed Options for Pro-Competitive Measures**

	Option 1 - 50 MHz Set-Aside	Option 2 - 100 MHz Cross-Band Cap	Option 3 - Both
3800 MHz Effective Set-Aside (% of 3800 MHz auction)	50 MHz (20%)	<b>86 MHz (35%)</b>	89 MHz (36%)
Regional & rural operator 3500 MHz holdings	69 MHz (34% of 3500 MHz band)		
<b>Outcomes across 3450-3900 MHz</b>			
Regional & rural operator cross-band minimum (% of combined 3500+3800 MHz band)	119 MHz (26%)	<b>155 MHz (34%)</b>	158 MHz (35%)
<b>76% of Canada</b> Regional & rural operators hold less than 100 MHz of 3500 MHz spectrum (59 service areas <sup>47</sup> )	Less guaranteed for regional & rural operators than via the proposed cap (i.e. 60-140 MHz)	<b>150 MHz guaranteed for regional &amp; rural operators (with minimum 2 licensees per region beyond the NMSPs)</b>	
<b>6% of Canada</b> Regional & rural operators hold exactly 100 MHz of 3500 MHz spectrum (23 service areas)	150 MHz guaranteed for <b>regional &amp; rural operators</b>		
<b>18% of Canada</b> Regional & rural operators hold more than 100 MHz of 3500 MHz spectrum (90 service areas <sup>48</sup> )	Slightly more guaranteed for regional & rural operators than via the proposed cap (i.e. 160-220 MHz)	150 - 170 MHz guaranteed for regional & rural operators	Same as Option 1

<sup>47</sup> Service area population range: Minimum 6,854, Median 77,974, Average 450,441, Maximum 7,030,750.

<sup>48</sup> Service area population range: Minimum 12,981, Median 50,240, Average 71,720, Maximum 349,283.

80. Of the three options, Option 1 (the use of an explicit set-aside without a cross-band cap) results in the largest amount of NMSP-accessible spectrum at auction. However, Option 1 does nothing to mitigate the same anticompetitive incentives for bidders in the 3800 MHz auction as were seen in the 3500 MHz auction (i.e., for Bell and Rogers to maintain their mid-band TDD spectrum advantage, as described in response to Question 4). The highly likely result of such an auction would be yet another unbalanced outcome accompanied by more world record spectrum prices. Further, Option 1 hurts NMSPs where regional and rural operators already hold over half the 3500 MHz band. As such, TELUS strongly recommends that ISED implement a cross-band cap (Option 2) because Option 1 does not do anything to achieve a balanced distribution broadly across the industry, nor is it practical to apply a further set aside in areas where the set-aside-eligible parties are the majority band incumbents.

**Table 2: Service areas with an effective set aside less than 50 MHz under Option 2**

Number of Service Areas	Effective set- aside	National population %	Regional & rural operator 3500 holdings
66	40 MHz	13.8%	110 MHz
13	30 MHz	1.5%	122 MHz
4	20 MHz	0.7%	130 MHz
2	10 MHz	1.5%	140 MHz
5	0 MHz	1.0%	157 MHz
90 (total)	34 MHz average	18.4% total	116 MHz average

81. TELUS is opposed to Option 3. As with Option 1, Option 3 hurts NMSPs where regional and rural operators already hold over half the 3500 MHz band. A dedicated set-aside in service areas where the set-aside-eligible parties are the majority band incumbents (after the 3500 transition and set aside) would lead to suboptimal outcomes for Canadians as the NMSPs would not be able to get spectrum they need to deliver 5G services. The Option 2 cap in these service areas representing 18% of Canada ensures that no less than 150 MHz is held by non-NMSPs. Option 2 provides a 34 MHz effective set aside in these areas. 66 of 90 areas will have a 40 MHz effective set aside.
82. While Option 2 increases by over 70% the amount of spectrum reserved for non-NMSPs (the effective set aside), Option 3 increases the effective set aside over Option 2 only very marginally. The increase in set-aside spectrum created by Option 3 only takes effect where the regional and rural operators already hold more than 100 MHz of 3500 MHz spectrum (i.e., more than half of the 3500 MHz band) and where, in some cases in the 3500 MHz auction, there was little or no NMSP accessible spectrum made available.<sup>49</sup> In these areas, Option 2 already means that on aggregate the NMSPs will always hold less than 300 MHz of the 450 MHz across 3450-3900 MHz. Table 2 above illustrates the range of effective set asides in these regions. NMSPs should not be further restricted in these regions by the layering on of a set aside on top of a cross-band cap where regional and rural operators already hold the majority of the 3500 MHz band and who under Option 2 would be guaranteed to hold between 150 and 170 MHz across 3450-3900 MHz

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<sup>49</sup> In the 3500 MHz auction, out of the 90 service areas where regional and rural operators now hold more than 100 MHz of the band: In 2 of these service areas (Trois-Rivieres and Sherbrooke) all available spectrum was reserved as set-aside, leaving no spectrum for NMSPs to bid on. In 77 of service areas, 50 MHz of unencumbered or nearly unencumbered spectrum was set-aside, and in 65 of those, 40 MHz or less was accessible by NMSPs for bidding.

following the 3800 MHz auction. ISED has identified a risk to the post-auction marketplace. The best way to minimise this risk is with a cross-band cap. A set-aside within that cap adds minimally to ISED's sought outcome while detracting from it in important markets. As such, ISED should implement Option 2, the cross-band cap.

#### **Q6: Alternative options for pro-competitive measures**

**Q6.** ISED is seeking comments on alternative options for pro-competitive measures for the 3800 MHz auction.

83. TELUS continues to not have any alternative recommendation other than for ISED to modify Option 2 to employ a 110 MHz cross-band cap rather than a 100 MHz cross-band cap. TELUS provides the rationale behind this recommendation in response to Question 11a where it also comments on Rogers' proposal for a 150 MHz cross-band cap.
84. Almost all of the set-aside beneficiaries call for competitive measures which are drastically modified from the proposed options. They recommend enlarged set-asides, sometimes smaller caps and sometimes geographically differentiated policy (urban / rural). None of these proposals is practical at a holistic level in TELUS' view. For example, while an 80 MHz cross-band cap and 160 MHz set-aside may be helpful for WISPs and smaller regional operators, these suggestions would result in a heavily distorted distribution of spectrum that does not serve to benefit Canadians. This would split the band among at least 6 providers. It is impractical to expect 6+ parallel networks to be built in rural areas.

85. Set asides ranging from 80 to 100 MHz would be severely detrimental and unreasonable because they do not account for the variation in holdings in the 3500 MHz band as a result of the FWA transition. Up to 85% of the 3500 MHz band in some markets is in the hands of set-aside beneficiaries. At least half the band is held by regional and rural operators in 24% of the country. The effective set-aside created by the cross-band cap is a mechanism that accounts for this variation in holdings. A larger set aside does not make sense where set-aside beneficiaries already hold half or more of the band. A 100 MHz cross-band cap automatically protects for set-aside beneficiaries more than 50 MHz (and up to 140 MHz) wherever NMSPs collectively already hold more than half (i.e., 100 MHz) of the 3500 MHz band.
86. A 100 MHz cross-band cap provides an effective set-aside of:
- a. 100-140 MHz in 47% of the country by population;
  - b. 60 MHz or more in 76% of the country by population;
  - c. exactly 50 MHz in 6% where regional and rural operators already hold half the band (100 MHz); and
  - d. an average 34 MHz set-aside in the 18% of Canada where regional and rural operators already hold the majority of the 3500 MHz band.
87. It is worth noting that 3900-3980 MHz (the new expanded WBS band) will be made available for localised services as part of ISED's repurposing of the 3800 MHz band and this further negates the need for an expanded set aside.
88. SaskTel's suggestion that ISED implement a 50 MHz auction cap supports operators who already hold 50 MHz or more in all of their operating regions such as SaskTel but would

make it impossible for operators such as TELUS to secure 100 MHz except in a very few markets. This is a non-starter in TELUS' view.

#### **Q7: Set-aside eligibility**

**Q7.** ISED is seeking comments on its proposal to limit the eligibility to bid on set-aside licences to those registered with the CRTC as facilities-based providers that are not NMSPs, and that are actively providing commercial telecommunications services to the general public in the relevant Tier 2 service area of interest, effective as of the date of application to participate in the 3800 MHz auction. If not supporting ISED's proposal, provide alternate eligibility criteria.

89. TELUS vehemently opposes the use of set-asides as they have repeatedly been shown to distort auction dynamics and outcomes. TELUS sees no need for a set-aside in the 3800 MHz auction, given that a cross-band cap achieves the outcomes sought by ISED without the negative effects of set asides, as described in TELUS' response to Question 5.
90. If a set-aside is to be applied, TELUS opposes the regional nature of ISED's proposed set-aside eligibility. Eligibility should not be limited to "actively served" Tier 2 service areas. The criteria allows very few bidders to be eligible for set-aside licences in each region. Segmenting set aside eligibility into existing regional markets deters regional operators from entering new markets. Eligibility should be granted on a Tier 1 basis, not limited to the service area(s) in which a bidder is actively providing services.
91. However, TELUS concedes that if ISED structures the set aside eligibility as it did in the 3500 MHz auction, then only bidders that have actual facilities in the area in which they are bidding should be eligible to bid on set-aside blocks. The criteria for what constitutes

*“actively providing commercial telecommunication services to the general public”* is not clearly defined.

92. TELUS notes and agrees with many respondents’ (Bell, CanWISP, Cogeco, Eastlink, Rogers and Xplornet) suggestions that ISED better define *“actively providing commercial telecommunication services”* and clearly define what criteria ISED will use to gauge whether a set-aside applicant is deemed eligible or not. Bell and Cogeco propose that eligibility be based on the provision of service on a Tier 4 level versus the proposed Tier 2 level. Cogeco<sup>50</sup> submits that Tier 2 service areas are too large. Rogers<sup>51</sup> suggests eligibility should be limited to those operating local wireless network services: *“It is also clear that the well-capitalized regional carriers do not require speculative opportunities to acquire taxpayer subsidized spectrum in order to flip it for their own profit, such as Eastlink’s AWS-3 sale or Videotron’s 700 MHz and 2500 MHz sale.”*

93. TELUS supports CanWISP’s<sup>52</sup> suggestion that ISED should add marketing to the eligibility criteria, such that the third criteria would be worded:

[...] those registered with the CRTC as facilities-based providers, that are not NMSPs, and that are actively **marketing and** providing commercial telecommunications services to the general public in the relevant Tier 2 service area of interest, effective as of the date of application to participate in the 3800 MHz auction.

94. TELUS recommends that ISED provide clarity that only facilities-based carriers can satisfy the requirement of providing service in the eligibility criteria. If ISED is going to

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<sup>50</sup> Cogeco’s response to the Consultation, Paragraph 44.

<sup>51</sup> Rogers’ response to the Consultation, Paragraph 152.

<sup>52</sup> CanWISP’s response to the Consultation, Paragraph 55.



continue to grant privileged access and spectrum subsidies through set-aside eligibility, it must require a minimum investment in facilities based competition to screen out “pure speculators”. Eligibility to bid on set-aside spectrum should be limited to those that already have a track record of investing in a network in the area it is bidding. For clarity, this requirement would not be met if the applicant were merely a reseller of telecommunication services in the area they applied to be set-aside eligible or selling over the top services into the area.

95. TELUS contends that the review process for set-aside eligibility must be based on a principled approach that is justified, transparent and intelligible. TELUS notes that Bell<sup>53</sup>, Rogers<sup>54</sup> and Xplornet<sup>55</sup> also all call for increased transparency with the process. They indicate that information about set-aside eligibility for each licence area including the names of the parties that have qualified to bid on set-aside spectrum must be made public in advance of the start of the auction.
96. TELUS maintains that given the importance of the decision and the significant advantage that being set-aside eligible provides a bidder, ISED must publish the rationale for its decisions on set-aside eligibility, preferably when qualified bidders are published or at a minimum following the auction when results are announced.

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<sup>53</sup> Bell’s response to the Consultation, Paragraph 53.

<sup>54</sup> Rogers’ response to the Consultation, Paragraph 151.

<sup>55</sup> Xplornet’s response to the Consultation, Paragraph 85.

## Q8: Transferability of set-aside licences

**Q8.** ISED is seeking comments on its proposal that any set-aside licences acquired by set-aside-eligible bidders would not be transferable to set-aside-ineligible entities for the first five years of the licence term, except under certain circumstances as detailed in section 13.2.

97. TELUS strongly opposes the use of set-asides. If ISED chooses to implement a set-aside, TELUS would support the proposal to limit the transferability of set-aside spectrum for the first five years of the licence term.
98. While most respondents support the proposed five year limit for set-aside spectrum, Rogers and SaskTel offer slight adjustments. Rogers<sup>56</sup> suggests (and TELUS agrees) that the moratorium on transfers be extended to all entities including set-aside eligible entities, stating that “*Such a move will further limit spectrum speculation and help ensure that the spectrum is obtained by operators who will move quickly to deploy services and benefit Canadian consumers.*” SaskTel<sup>57</sup> raises concerns of speculation regarding the timing of the five year transfer restriction and “*the seven year MVNO sundown period [of] the CRTC’s MVNO decision.*” SaskTel suggests that the restriction periods should be synced (extending the transfer moratorium to 7 years) to limit the number of speculative MVNOs speculators to purchase spectrum as it is a condition for entry into the MVNO in an area it wants to serve. TELUS disagrees and considers that ISED’s first deployment milestone is the one and only regulatory backstop to deter MVNO speculation and

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<sup>56</sup> Rogers’ response to the Consultation, Paragraph 156.

<sup>57</sup> SaskTel’s response to the Consultation, Paragraph 84.

granting an additional two years before allowing spectrum to be transferred may result in spectrum lying fallow even longer.

99. TELUS would also support the proposed exception that would apply within the five year period to allow spectrum sharing with a set-aside-ineligible entity and the exception to permit exchange of equal amounts of 3500 MHz or 3800 MHz spectrum with a set-aside-ineligible entity.
100. TELUS supports ISED's proposal that the first midterm deployment requirements be assessed before any licence transfer to set-aside ineligible entities is approved. By forcing the requirements to be met either via deployment or subordination prior to transfer, ISED will help discourage spectrum speculation. TELUS is strongly opposed to permitting the transfer of any set-aside spectrum that has not been deployed.

#### **Q9: Size and quantity of set-aside blocks**

**Q9.** ISED is seeking comments on its proposal that a set-aside be auctioned as five unpaired blocks of 10 MHz.

101. TELUS strongly opposes the use of a set-aside in the licensing of 3800 MHz spectrum. As discussed in TELUS' response to Question 5 above, a cross-band cap achieves the pro-competitive outcome of creating a balanced distribution of mid-band TDD spectrum among all bidders (including an effective set-aside for regional and rural operators) without introducing the ill effects of an explicit set-aside.

102. TELUS is not surprised to see set-aside beneficiaries insisting on the use of an explicit set-aside. TELUS is also not surprised to see that most<sup>58</sup> of these responses suggest that the set-aside be “super-sized” to 100 MHz or more. ISED must reject all proposals to increase the size of an explicit set-aside as it would be unjustified, unnecessary and excessive.
103. The historical use of oversized set-asides does not justify their continued use in this or future auctions. Many of the prospective set-aside beneficiaries (e.g, Comcentric, Sogetel, Terrestar and Videotron) protest the fact that a 50 MHz set-aside (comprising 20% of the 3800 MHz spectrum being auctioned) is relatively small when compared to the 40% set-aside in the AWS-1 auction, 42% set-aside in the 3500 MHz auction<sup>59</sup>, 43% set-aside in the 600 MHz auction and 60% set-aside in the AWS-3 auction. Each of these historical set-asides represents an overprovisioning of spectrum for a “fourth player”, unprecedented anywhere in the world. Given how substantial these set-asides were, ISED should dismiss Videotron’s<sup>60</sup> and Cogeco’s<sup>61</sup> exaggerated claims of foreclosure from winning open spectrum. It was almost entirely a direct consequence of these substantial set-asides that caused false scarcity, leading to NMSPs paying record-high prices to win all remaining open spectrum and incentivising set-aside eligible bidders to be satisfied with the large quantity of deeply discounted set-aside spectrum (as compared to open spectrum).

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<sup>58</sup> Only Cogeco, SaskTel and Xplornet do not call for a larger set-aside. They support ISED’s proposed 50 MHz set-aside.

<sup>59</sup> 46.8 MHz of auction spectrum was set aside. When added to the 21.3 MHz of converted spectrum in the hands of Xplornet and other WISPs, 34% of the 3500 MHz band was guaranteed to be held by licensees other than TELUS, Rogers and Bell.

<sup>60</sup> Videotron’s response to the Consultation, Paragraphs 22-27.

<sup>61</sup> Cogeco’s response to the Consultation, Paragraph 31.

104. Even if ISED was able to rationalise these repeated oversized set-asides to enable regional and rural operators to catch up, the fact remains that they already hold 34% of the 3500 MHz band (68.6 MHz), meaning that even a set-aside of “only” 50 MHz would result in regional and rural operators holding 118.6 MHz in the 3450-3900 MHz range – more than a quarter of the 450 MHz spectrum band.
105. It is worth repeating that 3900-3980 MHz (the new expanded WBS band) will be made available for localised services as part of ISED’s repurposing of the 3800 MHz band and this further negates the need for an expanded set aside.
106. If, despite the proposed cross-band cap creating a larger effective set-aside, ISED still determines that an explicit 50 MHz set-aside is needed for the 3800 MHz spectrum auction, TELUS would continue to recommend that it be auctioned in same way as open spectrum; that is, as (five) unpaired generic blocks of 10 MHz.

#### **Q10: Scope of a cross-band cap**

<p><b>Q10.</b> ISED is seeking comments on its proposal that the cross-band cap be applied across the 3500 MHz and 3800 MHz bands.</p>
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107. TELUS strongly supports ISED’s proposal to apply a cross-band cap across the 3500 MHz and 3800 MHz bands as did almost every other operator responding (CanWISP, Cogeco, Comcentric, Eastlink, ECOTEL, Exolink, Iristel, Sogetel, Terrestar, Videotron). Bell supports a cross-band cap if competitive measures are required. SaskTel

recommends an auction cap that acts exactly like a 100 MHz cross-band cap to them in almost all of their territory by population.

108. TELUS' responses to Questions 4 and 5 above illustrate the importance of applying a cross-band cap in order to preserve wireless competition for Canada's 5G future. Given the current unbalanced state of 3500 MHz allocations, only a cross-band cap can promote balance, ensuring the opportunity for all network providers to have enough of the critical mid-band TDD spectrum asset that they require to deliver positive 5G outcomes for all Canadians, in urban, rural and remote regions of the country.
109. It is abundantly clear that ISED, industry and international standards bodies (e.g., 3GPP) alike all recognise the convergent nature of the 3500 MHz and 3800 MHz spectrum bands. ISED clearly recognised this fact when it decided to move the WBS band from 3650-3700 MHz up to 3900-3980 MHz in its 3800 MHz Transition Decision,<sup>62</sup> thereby creating the opportunity for a contiguous 450 MHz band spanning 3650-3900 MHz. In this Consultation, ISED reinforces this "single band" mentality by designing mechanisms to enable contiguity not only within the spectrum to be auctioned in the 3800 MHz band, but across the 3500 MHz and 3800 MHz bands as well.
110. Since ISED last sought industry input on this band (in the November 2020 "repurposing consultation" on 3650-4200 MHz), two important U.S. auctions<sup>63</sup> have been completed. The result: all major operators hold spectrum in the 3800 MHz band, with two of the largest (AT&T and T-Mobile) holding significant spectrum assets across both 3500 MHz

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<sup>62</sup> *Decision on the Technical and Policy Framework for the 3650-4200 MHz Band and Changes to the Frequency Allocation of the 3500-3650 MHz Band*, Canada Gazette SLPB-002-21, May 2021. Link: <https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11699.html>

<sup>63</sup> Auction 107 for 3700-4200 MHz spectrum (<https://www.fcc.gov/auction/107>) and Auction 110 for 3450-3550 MHz spectrum (<https://www.fcc.gov/auction/110>).

and 3800 MHz bands. The implications are clear – it is inevitable that ecosystem developments around the 3GPP n77 band (3300-4200 MHz) will accelerate dramatically.

111. With these three factors in mind – the clear need and desire to sustain balanced competition, ISED’s creation and support for one contiguous wide 5G band and the rapid convergence of a single harmonised ecosystem, it is clear that a cross-band cap applied across the 3500 MHz and 3800 MHz bands is the right approach for this auction.

#### **Q11: Details of a cross-band cap**

##### **Q11.**

- a. ISED is seeking comments on its proposal that the maximum amount of spectrum that bidders in the 3800 MHz auction can acquire is a total of 100 MHz across the 3500 MHz and 3800 MHz bands.
- b. ISED is seeking comments on its proposal that the 3500 MHz band be considered as part of this cap and 3500 MHz band licensees would not be required to divest any 3500 MHz band licences in order to fall within the spectrum cap. If this proposal is implemented, the conditions of licence for all 3500 MHz licences would be amended to reflect this decision.

#### ***Size of a cross-band cap***

112. A cross-band cap is essential for the auction of 3800 MHz spectrum and this was confirmed by the vast majority of respondents. TELUS along with CanWISP, Cogeco, Comcentric, Eastlink, ECOTEL, Exolink, Iristel, Sogetel, Terrestar, and Videotron all support the proposed 100 MHz cross-band cap and Bell says its the best option if competitive measures are to be implemented.
113. CanWISP, ECOTEL and Iristel do suggest that ISED implement a reduced 80 MHz cross-band cap in rural markets. As TELUS discusses in response to Question 6, an 80

MHz cross-band cap and 160 MHz set-aside may be helpful for rural and smaller regional operators, but would result in a heavily distorted distribution of spectrum that does not serve to benefit Canadians. This would split the band among at least 6 providers. It is impractical to expect 6+ parallel networks to be built in rural areas.

114. TELUS and mobile operators and Xplornet would agree that a cross-band cap cannot be less than 100 MHz in the 5G era. A 100 MHz cross-band cap, however, ensures that in every market there is 50 MHz reserved for a fifth licensee. The economics do not exist to support five competing networks in every market. Xplornet<sup>64</sup> agrees: “[I]f a 100 MHz cap is adopted, set-aside bidders could obtain 100 MHz of spectrum, each national provider could acquire 100 MHz of spectrum, and there would still be 50 MHz of spectrum available. The result of adopting a cap would be that 50 MHz of spectrum would either be sold below fair market value, or not be sold at all.”
115. ISED has already earmarked 80 MHz from 3900-3980 MHz for localised uses. Reserving 50 MHz of critical mid-band TDD exclusive use spectrum for a fifth licensee in every service area will frustrate ISED’s goal of connecting every Canadian to high quality, competitive networks wherever this spectrum is left fallow.
116. TELUS views a 110 MHz cross-band cap (instead of 100 MHz) as a more efficient design. A 110 MHz cross-band cap still provides more effective set aside spectrum than an explicit 50 MHz set aside. TELUS proposes Option 2a (Option 2 with a 110 MHz cross-band cap) which results in an effective set-aside of 57 MHz on average. TELUS’ Option 2a strikes a balance between ISED’s Option 1 and Options 2 (and 3) and has the

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<sup>64</sup> Xplornet’s response to the Consultation, Paragraph 25.



benefit of getting a bit more spectrum into the hands of each of the network builders.

**Table 3: TELUS Alternative Proposed Option 2a for Pro-Competitive Measures**

	Option 1 - 50 MHz Set Aside	<b>Option 2a - 110 MHz cross-band cap</b>	Option 2 - 100 MHz cross-band cap
3800 MHz Effective Set Aside	50 MHz (20%)	57 MHz (23%)	86 MHz (35%)
Regional & rural operator 3500 MHz holdings	69 MHz (34% of 3500 MHz band)		
<b>Outcomes across 3450-3900 MHz</b>			
Regional & rural operator Cross Band minimum	119 MHz (26%)	126 MHz (28%)	155 MHz (34%)

117. Rogers recommends that the cross-band cap be a minimum of 150 MHz. While any operator would take as much spectrum as it could get, a 150 MHz cross-band cap is basically like having no cap. In the Canadian market context, a 150 MHz cross-band cap creates no effective set aside which means that ISED would likely layer on a (second after 3500 MHz) 50 MHz set-aside. A 50 MHz set-aside is unnecessary in the case of a 100 or 110 MHz cross-band cap because of the effective set-aside created.

***Grandfathering above a cross-band cap***

118. As confirmed in TELUS' responses to Questions 4, 5, 6, 10 and 11a, TELUS supports ISED's proposal to include 3500 MHz as part of a cross-band cap.

119. TELUS, affected licensee Xplornet, and every other respondent to the question supports ISED's proposal that 3500 MHz band licensees not be required to divest any 3500 MHz band licences in order to fall within the spectrum cap. There are so few cases where a single licensee holds more than 100 MHz of 3500 MHz spectrum that it would not create any meaningful disruption to the desired outcome of a cross-band cap (enabling a balanced distribution of 3500 MHz and 3800 MHz spectrum).

**Q12: Duration of a cross-band cap**

**Q12.** ISED is seeking comments on its proposal that the cross-band cap be in place for five years following the 3800 MHz auction.

120. TELUS notes the majority of 3500 MHz band stakeholder respondents (i.e., Bell, CanWISP, Eastlink, Rogers, Sogetel, Videotron, Xplornet) agree with ISED's proposal that if a cross-band cap is applied, it should be in place for five years.
121. TELUS continues to support ISED's proposal to implement the cross-band cap for a period of time following the 3800 MHz auction. However, TELUS agrees that the cross-band cap should apply for five years, but starting from the date of the first 3500 MHz spectrum licence issuance (i.e., starting December 17, 2021 and expiring December 17, 2026). Cogeco<sup>65</sup> makes the same proposal as TELUS in its response to Question 24.
122. Limiting the application of the cross-band cap to this period of time would be appropriate as the restriction on transfers would also apply (retroactively) to 3500 MHz licences. If

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<sup>65</sup> Cogeco's response to the Consultation, Paragraphs 98-99.

applied as proposed by ISED, the restriction for potential 3500 MHz licence transfers would extend to a seven-year period following the 3500 MHz auction.

### Q13: Generic licences and encumbrance

**Q13.** ISED is seeking comment on:

- a. The proposal to use generic licences and to offer licences in two separate categories of generic licences in the 43 service areas with encumbrances, as listed in annex A.
- b. The proposal to use a 10% threshold to determine whether the 3700-3900 MHz blocks in a service area should be categorized as encumbered; and
- c. If a set-aside is applied, stakeholder preference on whether the set-aside should be wholly contained in the unencumbered category or in the encumbered category in the 43 service areas with encumbrances, and the proposal to consider all blocks won by set-aside eligible bidders as set-aside blocks.

### *Use of generic licences*

123. TELUS and all other parties responding to this question in the Consultation support ISED’s proposal to use generic licences for the auction of 3800 MHz spectrum.

124. As noted by ISED in Paragraph 63 of the Consultation, “[g]eneric licences are blocks of spectrum that are sufficiently similar and comparable in value to one another that they can be offered as a single category in each service area.”

125. TELUS supports ISED’s assertion<sup>66</sup> that in areas without FSS encumbrance, all 25 blocks of spectrum should be categorised as a single generic “unencumbered” product. In light of the proposed 20-year licence term and the potential for early displacement via private agreements, the variation between WBS and FSS transition timelines (March 2027 vs.

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<sup>66</sup> Paragraph 66 of the Consultation states: “Given the proposed 20-year licence term and proposal to allow for additional time to meet the deployment requirements, ISED is of the view that the two year difference in transition timelines for rural and remote Tier 5 service areas is not likely to result in a significant difference in value between the licences in 3650-3700 MHz and the licences in 3700-3900 MHz.”

March 2025) in rural Tier 4 service areas does not constitute a sufficient difference in value to justify disrupting contiguity for one or more bidders.

126. TELUS also supports ISED’s proposal to offer generic licences in two separate categories (unencumbered and encumbered) where needed due to significant encumbrance. However, TELUS does not agree with the categorisation of the proposed Tier 4 areas considered as encumbered in Table A1 of Annex A.

***Threshold for encumbered spectrum***

127. It is difficult to assess the “correct” threshold for determining encumbrance without understanding the specific geographic impact of the encumbrance in each Tier 4 service area (i.e., what population may licensees holding encumbered spectrum not be able to serve for the foreseeable future?). TELUS appreciates that ISED likely needed to implement a preliminary coarse model to develop the list of Tier 4 service areas proposed to be categorised as encumbered in Table A1 of Annex A of the Consultation. It is clear to TELUS that actual encumbrances cannot be specified via maps until coexistence measures to support the protection of FSS earth stations and gateways have been established in the upcoming development of the SRSP and RSS standards for the 3800 MHz band. The work to finalise these two standards documents should be completed in advance of next year’s auction to allow equipment to begin being developed and certified for the Canadian market, allowing ISED to publish the relevant data (i.e., maps and calculated unencumbered population figures) and providing bidders sufficient time to assess the full impact of spectrum encumbrances in their individual valuations. As noted

in TELUS' reply to Question 2, ECOTEL<sup>67</sup> and Iristel<sup>68</sup> also highlight this requirement to support bidders' preparation for the auction.

128. Despite the challenge in identifying even coarse estimates of the encumbered population within each service area, TELUS supports the principle of establishing a threshold to determine whether or not 3700-3900 MHz spectrum should be separated into a different “encumbered” generic product; TELUS agrees that 10% would be a reasonably conservative estimation margin for this threshold, as it is likely small enough that encumbered spectrum could be classified as “*sufficiently similar and comparable in value*” to unencumbered spectrum. Most other parties addressing the specific proposal of applying a 10% threshold (BCBA, Bell, CanWISP, Comcentric, Eastlink, ECOTEL, Iristel, SaskTel, Rogers, Terrestar, Videotron, Xplornet) agree that it is a reasonable level for differentiating encumbered spectrum from unencumbered spectrum.
129. TELUS has conducted a preliminary assessment for the Montreal (4-051) service area, following the analysis provided by ISED for the Weir, QC earth station in the development of SRSP-520 for the 3500 MHz band. The results suggest that the potential encumbrance in the Montreal Tier 4 service area should fall well below even a 10% threshold. As discussed above in response to Question 2, TELUS assumes that the Weir site was only identified as a potential location for a consolidated gateway because it meets a “*low population impairment criteria*”, primarily due to how it is situated in the Laurentians mountain range. The natural shielding provided by this location allowed ISED to exclude the Montreal large population centre (LPC) and other nearby medium

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<sup>67</sup> ECOTEL's response to the Consultation, Paragraph 24.

<sup>68</sup> Iristel's response to the Consultation, Paragraph 23.

population centres (MPC) from coordination requirements in the 3500 MHz band, despite the co-channel nature of its operations. TELUS recommends that the same exclusions should apply to the 3800 MHz band; that is, no sites in the aforementioned large or medium population centres should be required to coordinate with the Weir earth station, and thus should be excluded from being counted towards an encumbrance threshold.

130. In determining the future rules for coexistence between 5G flexible use and the future consolidated Weir gateways, ISED must give serious consideration to the importance of 5G competition in the greater Montreal market. No satellite gateway operations should be permitted if such operations were to limit 5G competition in this second largest Canadian urban market. As long as ISED preserves the exemption for coordination obligations for the large and medium population centres in the area, TELUS sees no reason that the spectrum in this critical economic region of the country cannot be treated as “*sufficiently similar*”, regardless of which portion of the frequency band it lands in.

#### ***Set-aside and encumbered spectrum***

131. TELUS strongly opposes the use of a set-aside in the 3800 MHz auction. However, if ISED chooses to implement a set-aside, TELUS would strongly oppose locating that set-aside in the unencumbered product category in service areas containing encumbrances. Unsurprisingly, set-aside-ineligible bidders (i.e., Bell and Rogers) that would be disadvantaged by reserving unencumbered spectrum for the set-aside are aligned with TELUS’ view, whereas set-aside-eligible bidders (who would stand to benefit from being guaranteed the unencumbered spectrum) strongly prefer locating the set-aside in the unencumbered spectrum.

132. Assuming that Montreal is excluded from the list of service areas containing encumbered spectrum (as per TELUS' recommendation in response to Question 13a), the remaining 42 Tier 4 service areas in Table A1 of Annex A cover a population of 2.6 million, predominantly in rural or remote areas.
133. Each of these encumbered Tier 4 service areas contains populations under 200,000. These regions are largely rural and remote areas that regional operators do not serve at all (i.e., not even with low band coverage, let alone with higher frequency mid-band spectrum). However, in 31 of these service areas (1.8 million population), 50 MHz of unencumbered spectrum was already set-aside in the 3500 MHz auction. Setting aside additional mid-band spectrum in the 3800 MHz auction would not create any further incentives for regional operators (nor any provider without tower infrastructure) to build networks in these markets.
134. It is also noteworthy that in 26 of these 31 service areas (1.4 million population), the 3500 MHz auction's set-aside reserved the best (least encumbered) spectrum for set-aside-eligible bidders, leaving only small amounts of spectrum (often heavily encumbered) for NMSPs to bid on.
135. In Question 28 of this Consultation, ISED seeks guidance on what policy tools might help to accelerate the government's objective of delivering 50/10 Mbps connectivity to the most rural and remote markets of Canada. Given this objective, it would make little sense to set aside 50 MHz of the only available unencumbered spectrum beyond the reach of the national providers that are ready, willing and able to build the networks capable of meeting this goal. ISED acknowledges the need for 5G and broadband delivery in rural

communities and even the roadways of these encumbered areas; misallocating the unencumbered spectrum to set aside would work against ISED's desired outcome. This observation is echoed by Rogers<sup>69</sup> in its comments, stating that "*it increases the risk of these areas not being served as well as others*" and noting that "*historical experience tells us it will take longer for these companies to build in both urban and, particularly, rural markets.*"

136. Rogers<sup>70</sup> recommends a mechanism to deter "demand parking" and price driving behaviour which it recommends should apply if ISED decides to implement a set-aside in unencumbered spectrum within encumbered service areas. Rogers' proposed rules would prevent set-aside-eligible bidders from bidding on encumbered spectrum unless they were:

- a. Already bidding for all of the unencumbered spectrum; or
- b. If the set-aside is priced higher than the encumbered<sup>71</sup> spectrum.

137. If ISED chooses to implement a set-aside in unencumbered spectrum in encumbered areas (despite such a decision running contrary to its desired objectives), TELUS would support this mechanism proposed by Rogers.

***Treating all set-aside winnings as set-aside blocks***

138. TELUS strongly opposes the use of a set-aside in the 3800 MHz auction. However, if ISED chooses to implement a set-aside, TELUS would not object to ISED's proposal to

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<sup>69</sup> Rogers' response to the Consultation, Paragraphs 173-174.

<sup>70</sup> Rogers' response to the Consultation, Paragraphs 176-177.

<sup>71</sup> Rogers second condition states: "The price for set-aside unencumbered lots in an area is greater than or equal that the price of the unencumbered lots in the same area." TELUS believes the second "unencumbered" was intended to read "encumbered".



consider all blocks won by set-aside eligible bidders as set-aside blocks. TELUS notes that almost all parties responding to this question in the Consultation either support or do not oppose treating all winnings by set-aside eligible bidders as set-aside blocks.

#### **Q14: Anonymous bidding**

**Q14.** ISED is seeking comments on its proposal to use anonymous bidding during the auction.

139. TELUS is not opposed to ISED’s proposal to use anonymous bidding during the auction and notes that the use of anonymous bidding is broadly supported by all who responded to the Consultation.

#### **Q15: Clock auction format**

**Q15.** ISED is seeking comments on its proposal to use a clock auction format for the 3800 MHz spectrum auction.

140. TELUS supports ISED’s proposal to use a clock auction format for the 3800 MHz spectrum auction, which is broadly supported by all other potential bidders in their responses.

141. Both Rogers<sup>72</sup> and Iristel<sup>73</sup> express concerns regarding bids motivated by incentives other than acquiring spectrum, including “parking” of eligibility points and driving rival prices.

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<sup>72</sup> Rogers’ response to the Consultation, Paragraphs 180-182.

<sup>73</sup> Iristel’s response to the Consultation, Paragraph 53.

TELUS shares these concerns and supports Rogers' and Iristel's suggestion that ISED continue to explore ways to deter such behaviours.

142. Cogeco<sup>74</sup> proposes an alternate bid type ("all-or-nothing") in response to this question; TELUS addresses this in its response to Question 16.

#### **Q16: Clock stage structure and bid processing**

**Q16.** ISED is seeking comments on the proposed structure of the clock stage and on the proposed methodology for calculating processed demands and posted prices after each clock round, as described in annex D.

143. TELUS supports the proposed structure of the clock stage and notes that most other prospective bidders support reuse of the mechanisms that were applied in ISED's 3500 MHz auction.
144. The rules described in Annex D of the Consultation, including the proposed methodology for calculating processed demands and posted prices after each clock round, appear to be nearly identical to those implemented in last year's 3500 MHz auction.
145. The only area in which several respondents voice concerns is around the proposed use of intra-round bidding. In its response to the 3500 MHz auction consultation in 2019, TELUS<sup>75</sup> expressed concerns that intra-round bidding should not be used to justify the application of large bid increments. Videotron<sup>76</sup> makes a similar statement in response to this Consultation, noting that ISED did not appear to use overly large increments in the

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<sup>74</sup> Cogeco's response to the Consultation, Paragraphs 58-65.

<sup>75</sup> TELUS' comments on Consultation on a Policy and Licensing Framework for Spectrum in the 3500 MHz Band, August 2019. Link: [https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/SLPB-002-19-TELUS.pdf/\\$FILE/SLPB-002-19-TELUS.pdf](https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/SLPB-002-19-TELUS.pdf/$FILE/SLPB-002-19-TELUS.pdf)

<sup>76</sup> Videotron's response to the Consultation, Paragraph 98.

3500 MHz auction. TELUS generally agrees with Videotron (i.e., ISED never varied the bid increments above 10%), but TELUS suggests that 10% increments were still too large for some of the more populated service areas, particularly at late stages of the auction where the absolute increment was quite high. TELUS raises further concerns regarding bid increments and the pace of the auction in further detail in its response to Question 17.

146. Iristel<sup>77</sup> proposes that intra-round bidding introduces additional complexity that is problematic for smaller bidders who “*just want to bid*”, suggesting that ISED replace intra-round bidding with smaller bid increments. TELUS supports the reduction of bid increments, but does not believe that intra-round bidding needs to be removed from the auction; Iristel can choose to apply simple bids at clock prices.
147. Both Cogeco<sup>78</sup> and Bell<sup>79</sup> propose variations on “all-or-nothing” bids that would allow bidders to represent a desired increase or decrease in block quantity in a given product; unlike simple bids, all-or-nothing bids would not allow a bidder to have a processed demand in between the two endpoints of their current processed bid and their desired bid quantity. This mechanism could help mitigate exposure risk, ensuring a bidder does not end up with an undesirable mixture of bids “*in between*” their requested levels of demand. TELUS does not object to the notion of all-or-nothing bidding, but strongly opposes Cogeco’s proposed implementation.
148. ISED must not implement all-or-nothing bidding as proposed by Cogeco. The example specified by Cogeco in Paragraph 64 of its submission suggests that “*an all-or-nothing bid that results in a processed demand of zero blocks and a return to excess supplies*” be

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<sup>77</sup> Iristel’s response to the Consultation, Paragraph 54.

<sup>78</sup> Cogeco’s response to the Consultation, Paragraphs 58-65.

<sup>79</sup> Bell’s response to the Consultation, Paragraphs 62-66.

permitted. Despite Cogeco's proposed penalty for such a bid (being prevented from future bids to increase demand for that product), allowing this mechanism would fundamentally undermine the integrity of the clock auction format, whereby once a product is bid on, it is guaranteed to be sold. Allowing a bidder to reduce aggregate demand below a product's supply would introduce a new avenue for price-driving "gaming" whereby a bidder could drive up the price for a product it has no interest in winning, dropping out late in the auction and potentially leaving that spectrum unsold (because other bidders have withdrawn demand at lower price points).

149. The all-or-nothing bidding mechanisms proposed by Bell would apply on a per-product basis or to the entirety of a bid; in the event that an all-or-nothing bid is not fully processed, Bell proposes that the bid would revert to the previous round's processed demand. TELUS would not object to this version of all-or-nothing bidding if ISED determined that there was a practical method to implement it.

#### **Q17: Price increments**

<b>Q17.</b> ISED is seeking comments on the proposed range of percentage increments.
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150. TELUS does not oppose ISED maintaining the ability to set percentage increments within the range of 1% to 20%, as proposed. However, TELUS remains concerned that the use of increments in the upper half of this range (i.e., 10%-20%) creates an accelerated cadence at the start of the auction that may prove contrary to the desired intention of promoting price discovery, especially for products in the more populated service areas.

This proposed range of bid increments is generally supported by most responses to the Consultation; only Iristel<sup>80</sup> makes a recommendation to reduce the maximum bid increment to 10% (accompanying its proposal to eliminate intra-round bidding).

151. In response to Question 29, TELUS argues that opening bids must be much lower in order to facilitate price discovery. High opening bids, when combined with percentage increments of 10% or more, provide little opportunity for bidders to “negotiate” settlement.
152. Several responses suggest modifying the specific selection of bid increments as the auction progresses. SaskTel<sup>81</sup> recommends that ISED start the auction with larger increments but reduce them in later rounds “*when the absolute dollar values of bids are much larger.*” SaskTel notes that ISED did indeed start the 3500 MHz auction with larger (10%) bid increments in the early rounds, but fails to mention that ISED maintained that bid increment level throughout the auction.
153. In its response, Rogers<sup>82</sup> offers a detailed analysis of bid increments in the 3500 MHz auction, illustrating the two challenges TELUS highlights above (an uneven auction pace and obscured price discovery), while also addressing the governance challenges introduced by “*huge same-day price increases on key lots.*”
154. TELUS supports Rogers’ proposal to implement a cap on bid increments (as a percentage of reserve price) to help keep bid prices from growing out of control. However, TELUS continues to recommend starting the auction at 5% bid increments and only increasing

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<sup>80</sup> Iristel’s response to the Consultation, Paragraph 55.

<sup>81</sup> SaskTel’s response to the Consultation, Paragraph 94.

<sup>82</sup> Rogers’ response to the Consultation, Paragraphs 184-209.

the percentage if the auction is taking too long to progress. TELUS continues to make this recommendation regardless of ISED's choice of opening bids.

#### Q18: Activity rule

**Q18.** ISED is seeking comments on the proposed activity rule.

155. TELUS supports the use of the proposed activity rule, which appears to be unchanged from last year's 3500 MHz clock auction and worked well.
156. TELUS notes that other responses broadly support maintaining this same activity rule from the 3500 MHz auction but Bell, Rogers and Videotron provide additional input or recommendations of some minor modifications:
- a. Bell<sup>83</sup> proposes two types of "all-or-nothing" bids; TELUS addresses all-or-nothing bidding in its reply to Question 16.
  - b. Rogers<sup>84</sup> suggests that despite the activity requirement offering some flexibility to bidders, eligibility points for encumbered products should be set in a manner to deter point parking and support switching between substitutable products within service areas. TELUS addresses this proposal in its reply to Question 30.
  - c. Videotron<sup>85</sup> states that a more rapid application of increased activity requirements than were applied in the 3500 MHz auction would help progress the auction towards its conclusion and reveal bidders' "*true intentions*" earlier on in the

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<sup>83</sup> Bell's response to the Consultation, Paragraphs 62-66.

<sup>84</sup> Rogers' response to the Consultation, Paragraphs 62-66.

<sup>85</sup> Videotron's response to the Consultation, Paragraph 101.

auction. TELUS disagrees and suggests that ISED's progression of the activity requirements in the 3500 MHz auction were appropriately timed.

#### **Q19: Assignment and guaranteed contiguity**

**Q19.** ISED is seeking comments on:

- a. the proposed structure of the assignment stage, including the conditions under which service areas are combined into assignment areas, the order of the assignment rounds, and the approach to guarantee contiguity for one bidder across unencumbered and encumbered blocks when applicable and
- b. the proposal to apply bidder-optimal core pricing and use the nearest Vickrey approach in determining assignment prices and
- c. whether winning bidders in the 3800 MHz auction (that is the 3640-3650 MHz licensee) in the same service area should automatically be assigned its licences starting at 3650 MHz in the 129 service areas where only unencumbered blocks are available.

#### ***Proposed structure of the assignment stage***

157. TELUS supports the proposed structure of the assignment stage. With the exception of the one new consideration to guarantee contiguity for one bidder across unencumbered and encumbered blocks (when applicable), these rules appear identical to those implemented successfully in the 3500 MHz clock auction, and closely resemble those used in other recent licensing frameworks (e.g., the 600, 700 and 2500 MHz combinatorial clock auctions).
158. TELUS supports ISED's proposal for the approach to guarantee contiguity for one bidder across unencumbered and encumbered blocks, with the exception of a bidder that chooses to prefer cross-band contiguity (as described below).<sup>86</sup>

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<sup>86</sup> In its initial comments, TELUS indicated that cross-band contiguity must take priority over contiguity over unencumbered and encumbered blocks. In order to address Rogers' concerns with regards to the cross-band contiguity rule and its interaction with the contiguity rule for unencumbered and encumbered spectrum,

### ***Pricing mechanics***

159. TELUS supports the use of bidder-optimal core pricing and the use of the nearest-Vickrey approach in determining assignment prices.

### ***Guarantee of cross-band contiguity for all 3500 MHz band edge licensees***

160. TELUS strongly supports ISED's proposal to automatically assign licences at the bottom of the 3800 MHz band (that is, starting at 3650 MHz) to bidders that win unencumbered spectrum and that already hold a licence for the 3640-3650 MHz block. Implementing this straightforward rule would be consistent with the Spectrum Policy Framework for Canada's policy objective of maximising the economic and social benefits that Canadians derive from the radio frequency spectrum resource by guaranteeing contiguity for licensees in as many ways as are possible.
161. TELUS notes that there is broad support for this proposal (including Bell, Comcentric, ECOTEL, Iristel, SaskTel, Sogetel, TECHNATION, Terrestar and Videotron), with most of these supporting companies highlighting ISED's proposal as benefiting the public interest as a contribution towards the efficient management of spectrum as a scarce public resource. Bell<sup>87</sup> states that this guarantee of cross-band contiguity would constitute "*the first step in creating contiguous spectrum for all licences and will simplify the spectrum swap process which will eventually support contiguous spectrum for all licensees.*"

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TELUS recommends an opt-in mechanism for cross-band contiguity below. This choice to elect whether or not to receive cross-band contiguity allows a bidder to express its preference for one type of contiguity over the other, thus permitting ISED to offer an option for guaranteed cross-band contiguity in all service areas.

<sup>87</sup> Bell's response to the Consultation, Paragraph 70.



162. CanWISP<sup>88</sup> opposes ISED's proposal, suggesting variations on policies that would seek to maintain some degree of preferential access to transitioning WBS spectrum (3650-3700 MHz) currently being used by some of its member companies. TELUS respectfully proposes that ISED must reject CanWISP's suggestions, which would run counter to the stated rationale for ISED's 3800 MHz Transition Decision – moving the WBS band from 3650-3700 MHz to 3900-3980 MHz in order to promote the efficient use of spectrum and maximise opportunities for contiguity in a single expanded 3450-3900 MHz band. In reaching this decision, ISED gave WBS licensees ample notice of displacement (four years in urban markets and six years in rural markets) while generously expanding the WBS allocation from 50 MHz to 80 MHz; further accommodations for WBS licensees are unnecessary.
163. Cogeco<sup>89</sup> expresses a concern about guaranteed contiguity in the context of the instantaneous bandwidth (IBW) and tuning range of n77 radios. Looking at the outcome of the 3500 MHz auction, Cogeco's lowest frequency blocks are at 3490-3500 MHz. Given that all three major 5G infrastructure vendors have publicly announced 400 MHz IBW capabilities on their roadmaps,<sup>90</sup> Cogeco could bid for almost any frequency blocks in the 3800 MHz band while remaining within the capabilities of n77 radios that are

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<sup>88</sup> CanWISP's response to the Consultation, Paragraphs 79-82.

<sup>89</sup> Cogeco's response to the Consultation, Paragraphs 74-75.

<sup>90</sup> Ericsson:

<https://www.lightreading.com/5g/ericssons-12kg-5g-box-puts-nokia-and-huawei-on-back-foot/d/d-id/772244>

Samsung: <https://www.fiercewireless.com/5g/samsung-to-double-midband-5g-radio-bandwidth-to-400-mhz>

Nokia:

<https://www.telecomreview.com/index.php/articles/exclusive-interviews/5309-mobile-operators-can-now-scale-up-their-network-capacity-for-5g-with-nokia-s-new-products> and <https://www.nokia.com/airscale/>

expected to be available well before the 3800 MHz spectrum is auctioned and/or cleared for deployment.

164. ISED has a long history of promoting contiguity as a regular feature of Canadian auctions. All recent auctions using generic products (including 700 MHz, 2500 MHz, 600 MHz and 3500 MHz) have included a guarantee of contiguity.
165. There are two important precedents in “band expansion auctions” where incumbent licensees have entered the auction with existing holdings in the band. In the 2015 auction of 2500 MHz (BRS) spectrum, Rogers<sup>91</sup> benefitted from guaranteed contiguity in much of the country, as it was automatically assigned the “C” block wherever it held the “B” block. Last year’s 3500 MHz auction also guaranteed contiguity across transitioned and auctioned licences for both incumbent and new licensees. Enabling this opportunity required a reorganisation of the band – an outcome that was being undertaken to accommodate the band’s transition.
166. Both Cogeco<sup>92</sup> and Rogers<sup>93</sup> oppose ISED’s proposal to guarantee contiguity for 3500 MHz band-edge licensees winning spectrum in the 3800 MHz auction on the basis of “*unfairness*”, stating that rules around cross-band contiguity should have been determined before the 3500 MHz auction.<sup>94</sup> TELUS suggests that all bidders had the same knowledge of ISED’s strong precedents from past auctions where contiguity was

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<sup>91</sup> Bell and Rogers were both beneficiaries of this policy in Manitoba, where the “C” and “D” blocks were preassigned; Bell was assigned “B+C” blocks and Rogers was assigned “D+E” blocks.

<sup>92</sup> Cogeco’s response to the Consultation, Paragraph 73.

<sup>93</sup> Rogers’ response to the Consultation, Paragraph 214.

<sup>94</sup> SaskTel also notes that the proposal for guaranteed cross-band contiguity should have been made available prior to the 3500 MHz auction, but does not object to or oppose the proposal since contiguity is “*key to efficient network operation*”.

guaranteed for band incumbents and expects that bidders in the 3500 MHz auction would have developed their own bidding strategies accordingly.

167. In TELUS' reply comments on the 3500 MHz Licensing Framework consultation and in its response and reply comments for the August 2020 consultation on the 3800 MHz Technical and Policy Framework consultation, TELUS (and others) advocated for temporary 3500 MHz frequency assignments and the reassignment of 3500 MHz spectrum as part of the 3800 MHz auction process to enable the opportunity for long-term contiguity for all licensees. These proposals were not adopted, presumably due to ISED's concerns around a reassignment process for 3500 MHz spectrum.<sup>95</sup>
168. Without line of sight to such a mechanism that would guarantee contiguity for all licensees, bidders in the 3500 MHz auction were left with the opportunity to express a preference for blocks at the upper band edge (i.e., assignments ending at 3650 MHz) – a position that would enable expansion upwards into the 3800 MHz band, following the rules established in the May 2021 3800 MHz Transition Decision, indicating that 3650-3900 MHz would be auctioned for flexible use licensing. The bidder history<sup>96</sup> demonstrates that the industry collectively committed \$377 million in assignment bids at the top of the 3500 MHz band. TELUS paid \$41.6 million for these assignments in the service areas where it won the “V” block to ensure contiguity with the 3800 MHz band,

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<sup>95</sup> Paragraph 113 of the Consultation: “Introducing a re-assignment for licences won in the 3500 MHz auction could unnecessarily delay the deployment of the 3500 MHz band by incentivizing licensees to wait until the 3800 MHz band is assigned.”

<sup>96</sup> *Auction of Spectrum Licences in the 3500 MHz Band (Bidding Information: All Assignment Round Bids)*, published November 2021. Link: [https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/3500\\_All-Assignment-Round-Bids.csv/\\$file/3500\\_All-Assignment-Round-Bids.csv](https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/3500_All-Assignment-Round-Bids.csv/$file/3500_All-Assignment-Round-Bids.csv)

in stark contrast to Rogers in the 2500 MHz band and licensees of transitioned spectrum in the 3500 MHz band, none of whom had to pay anything at auction for contiguity.

169. Moreover, despite their assertions of “*unfairness*”, Rogers and Cogeco had the same opportunity that all other bidders did to express their value for and win the top of the 3500 MHz band. Out of 29 assignment rounds across 172 Tier-4 service areas in the 3500 MHz auction, Rogers did not submit a single bid for the “V” block. Instead Rogers chose to bid heavily for the middle of the band (applying a 2x to 4x premium to blocks in the middle of the band versus those lower in the frequency range). Cogeco did not express high value for the “V” block either, submitting zero bids for 25 of its 33 assignments and a small fraction of its maximum values for blocks elsewhere in the band for the remaining 8 service areas.
170. TELUS accepts that ISED will not implement a reassignment mechanism as part of this auction. However, after allowing bidders to pay for assignments at the top of the band, ISED must follow through with the precedents it created in the 2500 MHz and 3500 MHz band auctions and assign unencumbered spectrum licences won in this 3800 MHz auction contiguous to existing licences, wherever it is feasible to do so. The guarantee of cross-band contiguity in the 3800 MHz auction would not detract from the contiguity of 3800 MHz spectrum for any other bidders.
171. Rogers<sup>97</sup> suggests that it is concerned about several other “*serious problems*” that a guarantee of cross-band contiguity would create. It is noteworthy that these problems would not impact Rogers, as Rogers holds no licences in 3640-3650 MHz (and none of

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<sup>97</sup> Rogers’ response to the Consultation, Paragraph 224.

these concerns were raised by the parties that would be impacted by these considerations):

- a. In rural service areas, where the availability of 3650-3700 MHz spectrum is delayed (due to WBS transition lagging FSS transition by two years), a bidder may automatically be assigned spectrum starting at 3650 MHz despite preferring frequencies above 3700 MHz.
  - b. In service areas containing a mix of unencumbered and encumbered spectrum, the automatic assignment of unencumbered spectrum starting at 3650 MHz may prevent a bidder also winning encumbered spectrum from seeking contiguity between its unencumbered and encumbered winnings.
172. TELUS notes that none of the licensees holding 3640-3650 MHz spectrum that face the impact of these two potential issues noted by Rogers have actually expressed any concerns about them in their responses. Regardless, TELUS offers a simple solution that would address both issues. Following the conclusion of the allocation stage of the auction and prior to the start of the assignment stage, bidders that win unencumbered spectrum blocks in a region where they already hold a 3640-3650 MHz licence can be given the option to opt-in or opt-out of guaranteed cross-band contiguity. These bidders would be given bidding options as summarised in Table 4 below:

**Table 4: Bidding options for 3800 MHz spectrum winners in service areas where they already hold a 3640-3650 MHz licence**

Assignment service area type	Opt-in (guaranteed cross-band contiguity)	Opt-out
Unencumbered only	Bidder does not enter assignment bids	Normal bidding
Mix of unencumbered and encumbered	<p>Bidder does not enter assignment bids for unencumbered blocks</p> <p>Bidder bids as normal for encumbered blocks. Such bids could not prevent contiguity for another unencumbered/encumbered block winner</p>	Normal bidding

***Guarantee of cross-band contiguity in all service areas***

173. ISED’s proposal to guarantee contiguity for 3500 MHz band edge licensees winning unencumbered spectrum in the 3800 MHz auction need not only apply to the service areas where only unencumbered blocks are available; it should apply to any service area in which a bidder elects to opt-in for guaranteed cross-band contiguity, even in service areas containing a mix of unencumbered and encumbered spectrum.
174. In a service area containing encumbered spectrum with multiple winners of unencumbered spectrum, and where one of the winners holds the 3500 MHz “V” block, a contiguous assignment of unencumbered spectrum for that licensee would be guaranteed to start in the 3800 MHz “A” block (guaranteeing contiguity with the 3500 MHz band edge). That bidder would submit assignment round bids only to determine the assignment of its encumbered licences (if it won any) in the 3700-3900 MHz range. All other bidders in the assignment round would bid according to ISED’s proposed assignment mechanism

according to their preferences in the 3650-3700 MHz and 3700-3900 MHz ranges; consistent with ISED's proposal, one of those *other* bidders (i.e., not the 3500 MHz band edge licensee) would be guaranteed contiguity across the 3700 MHz unencumbered/encumbered boundary.

#### **Q20: Supporting contiguity via block swaps**

**Q20.** ISED is seeking comments on the proposal to permit, after the announcement of the provisional licence winners, an exchange through a transfer request, of equal amounts of 3500 MHz and 3800 MHz spectrum within the same licence area, including between a set-aside-eligible entity and a set-aside-ineligible entity across bands.

175. TELUS supports ISED's proposal to permit exchanges, through transfer requests, of equal amounts of 3500 MHz and 3800 MHz to promote the efficient use of spectrum. TELUS notes that this proposal is broadly supported by all parties answering this question in their responses to the Consultation.
176. In order to promote contiguity and the efficient use of spectrum, this proposal should not be limited only to equal quantities of 3500 MHz and 3800 MHz spectrum (e.g., one block of 3800 MHz for every one block of 3500 MHz); rather, any exchange which does not change the sum total of 3500 MHz and 3800 MHz spectrum for the parties involved should be permitted.
177. ISED can implement this proposal by identifying these exchange rights in the "transferability" condition of licence for each of the 3500 MHz and 3800 MHz spectrum bands. Once implemented, if parties propose such an exchange between themselves, they

should be permitted in their application to identify that they are seeking ISED for transfer approval of a transfer to support contiguity.

178. Because such an exchange does not present any spectrum concentration considerations or concerns, ISED should process the request without engaging the criteria and considerations listed as (a) through (h) described in Section 5.6.4.2 of CPC-2-1-23. This will decrease administrative burden for applicants seeking an exchange and would also expedite the ISED approval process, meaning that such exchanges should not require ISED's stipulated normal 12 week period for departmental review. Cogeco<sup>98</sup> makes a similar observation in its comments, proposing an "*expedited transfer approval and review request*" that Cogeco suggests can be concluded within 60 days.
179. With regards to competitive measures, TELUS notes that such "like for like" exchanges would not offend a cross-band cap (or require assessment of spectrum concentration in general), as the quantities held by any individual licensee would be unchanged pre- and post-transfer. TELUS agrees that all licence attributes not associated with competitive measures should accompany a licence transfer during exchanges, and that competitive measures should continue to apply to licensees (and not licences) after such an exchange.
180. While TELUS appreciates ISED's proposal to simplify licence exchanges that promote contiguity, such a proposal does not substitute for the guaranteed contiguity that ISED proposes in Question 19 and which TELUS and most other respondents endorse in their responses.

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<sup>98</sup> Cogeco's response to the Consultation, Paragraph 79.



181. TELUS supports Rogers’<sup>99</sup> proposal to have ISED chair a stakeholder process to promote exchanges through transfers.

**Q21: Affiliated and associated entities**

**Q21.** ISED is seeking comments on the proposed affiliated and associated entities rules that would apply to bidders in the 3800 MHz spectrum auction.

182. TELUS supports ISED’s proposed affiliated and associated entities rules that would apply to bidders in the 3800 MHz spectrum auction; the proposed definitions are identical to those adopted in previous auctions, including the 3500 MHz auction. All but three respondents across the Canadian wireless industry have also continued to support these rules which are sufficient to maintain auction integrity. Cogeco, ECOTEL and Rogers all use this question as a platform for baseless attacks on TELUS and Bell’s historical network sharing arrangements.
183. TELUS notes that these proposed rules are essentially unchanged from other previous licensing frameworks and have served the Canadian industry well to date. Maintaining consistency around these aspects of spectrum licensing is an important aspect of creating a stable and predictable regulatory environment. Such stability is critical to support the significant investments that will be required to produce positive 5G outcomes for as many Canadians as possible.

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<sup>99</sup> Rogers’ response to the Consultation, Paragraph 228.

## **Q22: Anti-collusion and communication rules**

**Q22.** ISED is seeking comments on the proposed rules prohibiting collusion and other communication rules, which would apply to bidders in the upcoming 3800 MHz spectrum auction.

184. TELUS supports the proposed rules prohibiting collusion and other communication rules, which would apply to bidders in the upcoming 3800 MHz auction.
185. TELUS notes that almost all respondents support the proposed rules, whose wording are essentially unchanged from previous licensing frameworks and have served the Canadian industry well to maintain the integrity of the auction process to date. Rogers uses this question as a platform for a baseless attack on TELUS and Bell's historical network sharing arrangements. Cogeco appears to be looking for clarity regarding pre-auction communications rules and what type of potential bidding arrangements they might be able to pursue.

## **Q23: Licence term**

**Q23.** ISED is seeking comments on its proposal to issue new flexible use spectrum licences in the 3800 MHz band with a 20-year licence term and the proposed wording of the condition of licence above.

186. TELUS notes all the 3500 MHz stakeholder respondents support a 20-year term; however, several note that the anticipated auction date would reduce the effective term by when the transition period would complete. These respondents (i.e., Cogeco, Eastlink,

Rogers and Xplornet) support the 20-year licence term starting when the transition period completes, when spectrum would effectively be available for deployment.

187. These responses align notionally to TELUS' proposal. TELUS continues to recommend that ISED maintain its consistent policy and offer a useful 20-year licence term for 3800 MHz spectrum. Since the time that will elapse between the auction of 3800 MHz spectrum and its first deployments may be several years (due to FSS and WBS transitions), TELUS recommends ISED issue licences for the 3800 MHz band as proposed, but with a fixed expiry date of March 31, 2045.
188. This expiry date would align with a 20-year term for the majority of licences with a planned transition date of March 31, 2025. To simplify the renewal process, TELUS recommends the same March 31, 2045 licence expiry date be applied to licences with a planned transition date of March 31, 2027 and to all encumbered products being auctioned (i.e., 3700-3900 MHz) in satellite-dependent areas.
189. TELUS' proposal of an 'effective 20-year' licence term is consistent with the 3500 MHz process, which used the same 20-year licence term regardless of the transition timeline for a service area (i.e., including rural licences with longer two or three year transition delays).
190. In order to accommodate this recommendation, TELUS proposes the following modified language in the first paragraph of the condition of licence specifying the term of 3800 MHz licences:

*This licence is effective from the date upon which it is issued, as set out in the Policy and Licensing Framework for Spectrum in the 3800 MHz band (the*

*Framework). All licences in this process will terminate on the same fixed expiry date of March 31, 2045.*

#### **Q24: Licence transferability and divisibility**

**Q24.** ISED is seeking comments on the proposals on the condition of licence related to transferability and divisibility, and the proposed wording above.

191. TELUS addresses considerations for spectrum licence transfers under various pro-competitive measures in its response to Question 8 and 20 above. TELUS supports ISED's proposals on the condition of licence related to transferability and divisibility (as do most responses to the Consultation). TELUS supports the proposed wording in the Consultation, with one exception.
192. In accordance with its recommendation in Question 12 regarding when the five year cross-band cap should expire, TELUS recommends the following modification to the first sentence of the paragraph on transferability considerations under a spectrum cap (emphasis applied to proposed changes):

*The spectrum cap put in place for the 3800 MHz auction will continue for five years from the date when **auctioned flexible-use licences in the 3500 MHz band were first issued, expiring on December 17, 2026.***

193. Cogeco<sup>100</sup> expresses a similar concern in its response and proposes a similar solution:
- “[T]hat licence terms be harmonized to the date of the issuance of the final 3500 MHz*

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<sup>100</sup> Cogeco's response to the Consultation, Paragraphs 98-99.

*licence, i.e., December 2021. Such a harmonization of licence terms would allow greater clarity for holders of spectrum licences subject to the cap that straddles the two bands.”*

#### **Q25: Deployment requirements**

**Q25.** ISED is seeking comments on the proposed deployment condition of licence as stated above as well as on the proposed levels of deployment as specified in annex B.

194. TELUS understands and acknowledges that both national and regional operators (i.e., Bell, Eastlink, Rogers, SaskTel, and Videotron) support the general deployment requirements but recommend a delay to account for the availability of cleared spectrum by at least March 31, 2025. SaskTel expresses additional concerns with the “*rural*” first general deployment milestone, and recommends it be delayed from 7-years to 10-years. While a minority of voices (i.e., BCBA and Xplornet) support Annex B and Annex C deployment requirements as proposed, their support largely reflects the relaxed nature of the general deployment requirement timelines since they are unaffected by the asymmetrical LTE mobile network deployment requirements.
195. TELUS has consistently advocated for stringent deployment requirements to ensure spectrum is put to use in a timely manner for Canadians. TELUS has also called for the elimination of asymmetric requirements that do little to deliver rural and remote connectivity or promote competition – especially by the regional operators. TELUS continues to recommend that ISED adopt the recommendations submitted by TELUS in

response to the 3500 MHz licensing framework consultation that would impose stronger deployment requirements on all licensees equally, as illustrated in Table 5 below.

**Table 5: TELUS Proposal for More Stringent Deployment Requirements**

	Minimum population coverage (3 year)	Minimum population coverage (5 year)	Minimum population coverage (7 year)	Minimum population coverage (12 year)
General deployment requirements for all Tier 4 service areas	N/A	ISED proposed 3800 MHz 10 year requirement	ISED proposed 3800 MHz 20 year requirement	Modify ISED proposed 3800 MHz 20 year requirement (add 25%)
Additional requirements for Tier 4 service areas containing a large population centre	90% of LPC	95% of remaining population outside LPC	N/A	N/A
Asymmetric requirements for LTE mobile network operators	Removed			

196. Several 3500 MHz stakeholder respondents (i.e., Bell, Comcentric, Eastlink, Rogers, and Sogetel), like TELUS, are also opposed to the asymmetrical LTE mobile network deployment requirement. The respondents' views are clear that the asymmetrical requirement is unduly penalising service providers that build extensive coverage to rural areas over service providers that focus on urban centres. Bell argues further to recommend that such requirements should be *“built into the general deployment*

*requirements*”, which aligns notionally with TELUS’ proposal but TELUS goes a step further to recommend accelerated requirements for all licensees.

197. General deployment requirements on their own cannot guarantee that spectrum will be used to serve all Canadians in every market. All they can accomplish is to ensure that spectrum will start to be put to use in every Tier 4 service area within 5-7 years, and be more broadly deployed at 10 and 20 year milestones. In ISED’s recent Access Licensing consultation<sup>101</sup>, TELUS advocated for expansive use-it-or-lose-it policies for renewal bands and use-it-or-share-it for initial term bands for all service providers meeting specified criteria. In this way, spectrum will be deployed where a business case exists whether by the licensee or an access licensee. TELUS provides additional considerations in response to Question 28 beyond the narrow general deployment requirement framework.

#### **Q26: Accelerated deployment requirements**

<p><b>Q26.</b> ISED is seeking comments on whether to accelerate the proposed timelines for deployment from what is proposed in annex B.</p>
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198. As discussed in Question 25, TELUS notes that many industry responses support a delay in the timelines for deployment requirements due to the long transition timelines proposed for 3800 MHz. TELUS disagrees and continues to support the application of accelerated timelines for deployment, as detailed in its response to Question 25 above.

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<sup>101</sup> *Consultation on New Access Licensing Framework, Changes to Subordinate Licensing and White Space to Support Rural and Remote Deployment*, Canada Gazette SLPB-004-21, published August 2021. Link: <https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11717.html>

## Q27: Deployment requirements for encumbered licences

**Q27.** ISED is seeking comments on:

- a. whether Tier 4 service areas with potential encumbered population of 30% or more, as identified in annex A, should have lower population coverage percentage deployment requirements for the general requirement, the mobile LTE requirement, or both and
- b. whether a minimum of 30% of potential population encumbrance is the appropriate level for consideration to lower deployment requirement levels

199. TELUS notes that nearly all 3500 MHz stakeholder respondents, except SaskTel, support, at a minimum, lowering the deployment requirement for service areas with at least 30% population encumbrances. Rogers proposes lowering the deployment requirement for service areas with at least 10% population encumbrance and scaling to match the unencumbered population. Similarly, Iristel proposes scaling the requirement to match the unencumbered population without threshold floor. These responses notionally align with TELUS's proposal to account for encumbrances when considering deployment requirements.
200. SaskTel proposes delayed deployment requirements in satellite-dependent areas until such time earth stations are no longer encumbering terrestrial deployment, which aligns with TELUS' proposal below.
201. Accounting for the 3500 MHz stakeholder respondents being largely aligned, TELUS continues to recommend that for the majority of licences that ISED considers encumbered (i.e., greater than 10% encumbrance), ISED should enforce the deployment requirements using the percentages and timelines proposed by TELUS in response to



Question 25, but with the population basis used to determine deployment requirements scaled to match the unencumbered population.

202. TELUS continues to recommend an exception to this rule for Tier 4 service areas in which encumbrances materially decrease the unencumbered population density. In such cases, the percentage deployment requirement for the general requirements should be adjusted to match other service areas with densities similar to the resulting density of the remaining unencumbered population. TELUS cannot make specific recommendations until ISED develops and publishes the final details of encumbrance (i.e., methodology, maps, and calculated population figures). As TELUS notes in its response to Question 13, these details should be completed well in advance of next year's auction to provide bidders sufficient time to assess the full impact of spectrum encumbrances in their individual valuations.
203. TELUS continues to recommend the one other exception to the rule for satellite-dependent Tier 4 service areas which are "*significantly encumbered*". ISED notes in Paragraph 68 of the Consultation that there are multiple satellite-dependent areas which are more than 90% encumbered. TELUS proposes that these service areas should not have deployment requirements for the time being. TELUS expects there is a likely path to clear these areas over time as the needs of earth station operators evolve. Should sound engineering assessment principles confirm that these service areas have become sufficiently unencumbered, the deployment requirements could be revisited at an appropriate time of the band's development.

### **P.183: Other conditions of licence**

**P.183** ISED is seeking comments on additional conditions of licence outlined in annex G that would apply to licences issued through the proposed auction process for spectrum in the 3800 MHz band. The proposed conditions of licence in annex G are based on existing policies and procedures.

204. In its comments, TELUS asks that the R&D condition of licence (COL) be removed entirely. The R&D COL is an antiquated requirement that is no longer necessary. With the innovation in the mobile wireless marketplace, licensees are compelled to study, invest and deploy the latest wireless technologies to deliver competitive retail services, rendering the R&D COL irrelevant.
205. In its comments, TELUS asked for the removal of the general right of licensees to obtain roaming. TELUS' position is justified because the CRTC already has an existing roaming tariff meaning that the ISED COL is a duplicative regime that is no longer necessary. In fact, the duplicative regime has led to a situation where the CRTC regime and the ISED regimes are in conflict.
206. At the very least, TELUS asked that ISED commence a general review and reconsideration of the mandatory roaming COL in totality. All licensees should be subject to competitive market forces to determine how and to what extent they wish to build their network coverage. The mandatory roaming COL dramatically alters the competitive dynamic and could have the effect of delaying network construction by some licensees.

207. In contrast, Rogers seeks to retain the mandatory roaming condition. It claims that the mandatory roaming conditions remain necessary, and that the CRTC mandatory roaming regime does not conflict with the ISED COL.<sup>102</sup>
208. In response to Rogers, the CRTC's mandatory roaming regime means, by definition, the ISED mandatory roaming regime is unnecessary. Notably, the CRTC conducted a review of the wireless marketplace that led to its Telecom Regulatory Policy 2015-177 and instituted the roaming regime that was necessary to support competition. The CRTC's regime gives regional operators the opportunity to roam on Rogers, Bell and TELUS to roam at tariffed rates, with all other roaming arrangements to be commercially-negotiated.
209. Rogers attempts to claim that TELUS and Bell's reciprocal network access arrangement somehow creates a marketplace where Rogers must be entitled to take advantage of mandated roaming by way of the ISED COL. This is a false equivalence. The TELUS / Bell arrangement is a commercially-negotiated arrangement. The two companies, fierce competitors in the marketplace, found mutually-beneficial ground where they were able to reach agreement on commercial terms, where both companies remain wholly-independent and acquire their own spectrum and build networks. In contrast, Rogers seeks mandated access so that it can delay its build decisions and rely on roaming in certain areas of the country.
210. By removal of the ISED COL, TELUS is asking that Rogers strike commercial arrangements for roaming and make marketplace decisions on where it will and will not

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<sup>102</sup> Rogers' response to the Consultation, Paragraphs 256-258.

build. As of now, the ISED COL impairs the marketplace, in that companies such as Rogers know that they will get network coverage by way of roaming. This means that Rogers does not have to conduct the build versus buy economics analysis in many areas of the country where it holds spectrum, because reliance on roaming is guaranteed. This is a complete 180 degree turn from true facilities-based competition.

211. On the topic of whether the ISED COL and the CRTC mandatory roaming regime conflict, TELUS noted in its Comments that there is a clear conflict because the ISED COL does not mandate seamless roaming, but the CRTC regime does so. Rogers' statements in this consultation that dispute any conflict are incredible. Notably, in a recent filing with the Federal Court of Appeal, Rogers pointed out that the ISED COL and the CRTC's regime creates "*conflicting regulatory obligations*" with respect to seamless roaming.<sup>103</sup> Therefore, Rogers somehow ignores its position before the Federal Court of Appeal when it declares here that the two regimes do not conflict. As admitted by Rogers at the Federal Court of Appeal, the inscrutable fact is that the two regimes conflict.

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<sup>103</sup> See Memorandum of Fact and Law of the Respondents, Rogers Communications Canada Inc. in *TELUS Communications Inc. v. CRTC and Others*, Federal Court of Appeal, Court File No 21-A-11, para.53.

## **Q28: Measures to promote rural and remote connectivity**

### **Q28.**

- a. ISED is seeking comments on potential measures or conditions of license that could accelerate Canada's Connectivity Strategy's target of 100% of the households covered with 50/10 Mbps within the timeframe of 2030.
- b. ISED is seeking comments as to the potential to increase deployment requirements in any relevant spectrum bands to increase both fixed and mobile services in rural and remote areas, and potentially provide coverage to currently underserved locations, such as roads.

### ***Potential auction incentive measures to promote rural and remote connectivity***

212. It is important to note that the wireless networks in Canada are amongst the very best in the world in respect of speed, reliability, user experience and expansiveness. Indeed, our country's world-leading networks have been constructed despite the material cost challenges associated with building and deploying technology and infrastructure across our huge and rugged national landscape. Canadian telecommunications carriers operate in one of the highest-cost regions in the world, due to our vast geography, challenging topography and climate, high spectrum cost, relatively high labour costs, tax regime and significant diseconomies of scale, given our low population density.
213. Notwithstanding these challenges, TELUS remains deeply committed to providing connectivity for communities in the most remote regions of Canada. In fact, despite the significant challenges associated with bringing high-speed connectivity to residents in the North, Canada has built world-leading wireless networks that reach 99.5 per cent of the population. We are proud of our exceptional efforts to connect Canada. We also know

that there is still much to be done; however, telcos alone cannot solve the issues related to remote connectivity.

214. TELUS has been advocating for responsible, principled and predictable regulatory policy that ensures expeditious, fair and balanced access to spectrum. Notably, TELUS has recommended a stricter use-it-or-lose-it condition on all spectrum licences that would encourage investment in rural Canada and discourage speculation on spectrum.
215. Further, TELUS considers that it would be unreasonable to rely solely on continually raising minimum deployment requirements as a means to address rural and remote connectivity to the remaining 0.5% of the population. TELUS suggests that ISED has an opportunity (as has been seen in other jurisdictions) to implement mechanisms via the allocation of spectrum that provide incentives to connect areas which are not currently connected versus simply focusing on minimum requirements and penalties.
216. TELUS notes that Analysys Mason recently published a study on *pro-competitive measures and coverage obligations in mid-band auctions*<sup>104</sup>, which describes how other OECD countries' regulators included incentives for increasing coverage. Notably Germany, Israel and Norway implemented a mechanism for the reduction in spectrum cost if an operator can reach a certain coverage target.
217. TELUS considers that a more effective means for ISED to accelerate Canada's Connectivity Strategy is the implementation of novel methods that incentivise a wireless provider to close the digital divide in underserved areas versus increasing coverage obligations to levels not economically viable.

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<sup>104</sup> Analysys Mason, *Pro-competitive measures and coverage obligations in mid-band auctions*, Published February 2022. Link: <https://www.analysysmason.com/consulting-redirect/reports/procompetitive-coverage-midband/>

218. TELUS considers spectrum to be a key enabler to connect every Canadian household to high-speed Internet (50/10), but spectrum alone will not solve the digital divide. The government has announced various funding commitments over numerous years in new support for high-speed connectivity in rural and remote communities. It should be noted that much of these funds are in support of fibre optic links, and other technologies such as Low Earth Orbit (LEO) satellite that is promising for connecting Canada's hardest-to-reach communities. There is no one technology solution nor is there one telecom company that will solve the connectivity needs of rural, remote, and Indigenous communities. Overall, to achieve the objectives set out in Canada's Connectivity Strategy resources must be better aligned with coordinated efforts in determining the most suitable approach to investing in the necessary critical network infrastructure to achieve those outcomes.

***Increasing deployment conditions to provide coverage in underserved areas***

219. Licensed, but unused, spectrum is blocking the government's goal of connecting every Canadian to 50/10 Internet by 2030. There are many bands in which even some urban spectrum is undeployed, primarily where set-aside licences have been issued in large service areas with relatively lax deployment requirements that can be satisfied for the foreseeable future by building out networks in only the largest cities. Smaller urban centres may not see deployment in any of these bands within the next fifteen to twenty years. While TELUS agrees that increasing deployment requirements can provide coverage to currently underserved locations, the government should generally not modify the conditions of licence for licences in their initial (post-auction) term. Industry has paid

billions of dollars for these licences with the expectation that the conditions of licence would not materially change during the initial term.

220. TELUS considers that in order to reach the government's stated goal of connecting all Canadians by 2030, access to all long term fallow spectrum is needed. TELUS' access licensing proposal<sup>105</sup> can compensate for the gaps in the deployment requirements implemented in ISED's previous licensing frameworks. As such, TELUS proposed a novel policy: "use it or share it". This version of access licensing would provide a temporary form of access licensing for a significant portion of undeployed spectrum and would balance the desire to see spectrum put to use versus the need to ensure a stable regulatory environment promoting investment in network facilities.
221. For bands initially subject to this alternate form of access licensing, ISED should allow carriers seeking to deploy unused spectrum to licence it using the same process as in its proposed access licensing framework. However, the primary licensee could reclaim this spectrum from the access licensee on short notice. This would have the effect of speeding up access to high-speed Internet in rural and remote communities without materially changing the rights secured at auction for the licence's full initial term.
222. TELUS considers the investment certainty of holding spectrum licences for the long term as a cornerstone to enabling infrastructure development and as such, ISED should not alter licence conditions in their initial term. TELUS recommends ISED consider TELUS'

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<sup>105</sup> TELUS' reply comments, *Consultation on New Access Licensing Framework, Changes to Subordinate Licensing and White Space to Support Rural and Remote Deployment* December 7, 2021, Link: [https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/SLPB-004-21-TELUS-Reply-Comments.pdf/\\$FILE/SLPB-004-21-TELUS-Reply-Comments.pdf](https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/SLPB-004-21-TELUS-Reply-Comments.pdf/$FILE/SLPB-004-21-TELUS-Reply-Comments.pdf)



proposal to the access licensing consultation to meaningfully address the issue of undeployed spectrum in a timely manner for the benefit of all Canadians.

### Q29: Opening bids

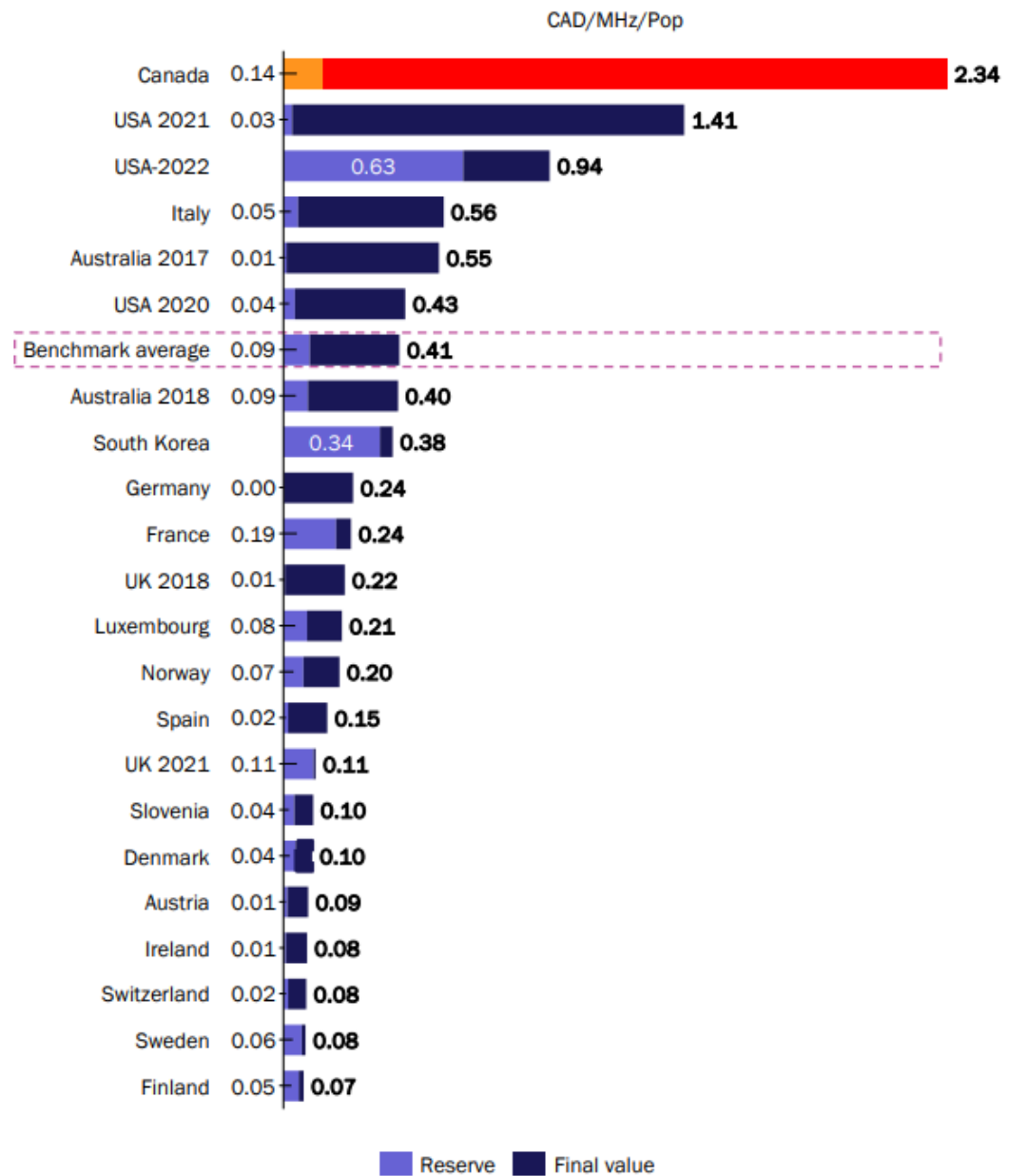
**Q29.** ISED is seeking comments on the proposed opening bid prices, including whether to reduce the opening bid prices for the encumbered category in the 43 service areas with encumbrances.

223. TELUS does not support the opening bid prices proposed by ISED.
224. The prices described in Annex F of this Consultation remain unchanged from the 3500 MHz auction. As proposed, the price of a single unencumbered 10 MHz block nationwide would be \$46,719,000 (or \$0.133/MHz/pop unit price). As noted by TELUS and others in their submissions to the 3500 MHz Licensing Framework consultation, Canada's average opening bid price far exceeds the global median opening bid price by a factor of approximately 10x.<sup>106</sup>
225. Canada's high opening bids played a major role in dictating the final price outcomes of the 3500 MHz auction, the most expensive mid-band spectrum auction on a unit price basis globally, as illustrated in Figure 4 below. TELUS notes that the price paid in this auction by existing national operators in Canada (that were not able to benefit from set-asides) was CAD \$3.27/MHz/pop; the unit price in Figure 4 is reduced by averaging open spectrum with set-aside spectrum.

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<sup>106</sup> TELUS' comments on *Consultation on a Policy and Licensing Framework for Spectrum in the 3500 MHz Band*, August 2019. Link: [https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/SLPB-002-19-TELUS.pdf/\\$FILE/SLPB-002-19-TELUS.pdf](https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/SLPB-002-19-TELUS.pdf/$FILE/SLPB-002-19-TELUS.pdf)

Figure 4: Final prices and reserve prices for mid-band auctions<sup>107</sup>



<sup>107</sup> Analysys Mason, *Pro-competitive measures and coverage obligations in mid-band auctions*, Published February 2022. Link: <https://www.analysysmason.com/consulting-redirect/reports/procompetitive-coverage-midband/>

226. In any given auction, there is usually a substantial element of “negotiation in a noisy room” involved, as bidders interpret the evolving aggregate demand, expressing a declining demand curve for their individual and collective desired quantities of spectrum in each region as prices rise. When opening bids and bid increments are high (as in the 3500 MHz auction), there are fewer opportunities (clock rounds) for bidders to resolve such negotiations; as a result, it is quite likely that the end prices do not permit the price discovery process to resolve naturally. This problem can be rectified by lowering the opening bids and reducing the bid increments; the only impact of these modifications is the potential for a slightly longer auction process. Extending the auction process by several rounds or days would be far more desirable than once again seeing Canadian spectrum prices repeating as globally high outliers.
227. With this in mind, TELUS sees no reason that opening bids cannot be lowered across the board. Recent U.S. auctions of equivalent spectrum<sup>108</sup> used opening bids which were an order of magnitude lower than those proposed by ISED (\$0.03/MHz/pop for the Top-50 “Partial Economic Area” (PEA) service areas in urban markets, \$0.006/MHz/pop for the next 50 PEAs, and \$0.003/MHz/pop for the remaining PEAs). These lower opening prices were used most recently in Auction 110 (3.45 GHz) despite its requirement for a reserve price mechanism, whereby the auction would have been deemed a failure if its total revenue failed to meet the projected cost to displace incumbent federal radar users. Rather than setting starting bids that met the reserve requirement, the FCC allowed the

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<sup>108</sup> Auction 107 for “C-band” spectrum in 3700-3980 MHz and Auction 110 for “3.45 GHz” spectrum in 3450-3550 MHz.

market to determine whether or not the spectrum was valuable enough to merit displacement of incumbent federal systems.

228. TELUS proposes that ISED adopt the following modified opening bids for the 3800 MHz auction while maintaining ISED's proposed categories for grouping service areas by unit price:
- a. Service areas with population over 2 million: \$0.04/MHz/pop
  - b. Service areas with population over 1 million but less than 2 million: \$0.014/MHz/pop
  - c. Service areas with population under 1 million that contain one or more CMA: \$0.007/MHz/pop
  - d. All other service areas: \$0.004/MHz/pop
229. This modified set of opening bids would align the high and low population tier service areas with the FCC "Top-50 PEA" and "Remaining PEA" unit prices, on a currency adjusted basis. The two middle categories of service area were determined by maintaining their relative position in the existing price ranges.
230. This proposal would result in the total amount of opening bids for one block of unencumbered 10 MHz nationwide being \$7,162,000 (an average unit price of \$0.02/MHz/pop), approximately 6.5x lower than ISED's proposed opening bids.
231. TELUS notes Bell's<sup>109</sup> recommendation to "*lower the opening bid prices for service areas with a population over 2 million*" (i.e., Toronto, Montreal and Vancouver); Bell conditions its recommendation on ISED holding an auction without spectrum set-asides.

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<sup>109</sup> Bell's response to the Consultation, Paragraph 123.

If ISED does not consider TELUS' recommendation to reduce opening bids across the board, TELUS would support Bell's recommendation to reduce the opening bid for the largest 3 service areas. However, TELUS would propose that this be done regardless of whether ISED implements an auction with set-asides; while TELUS shares Bell's concerns about a Canadian taxpayers' subsidy of set-aside spectrum, the extremely high outlier prices of Canada's 3500 MHz auction must provoke ISED to take immediate action to reduce the cost of spectrum in any way possible.

***Bid prices for encumbered spectrum***

232. In light of the fact that a specific methodology for determining the level of encumbrance has not been disclosed by ISED, it is challenging to make any specific recommendations for how encumbered spectrum should be treated with respect to opening bids. However, TELUS maintains its recommendation that the following principles that should be applied to opening bids for encumbered products:

- a. The population basis applied for determining the total opening bid (in \$) for the encumbered licence(s) should be adjusted to reflect only the unencumbered population. This reasonable adjustment is supported by Comcentric, Eastlink, Iristel, Rogers (but only for products with encumbrance above 30%), Sogetel and Terrestar. TELUS disagrees with SaskTel's<sup>110</sup> suggestion that "*given the outcome of the 3500 MHz auction where encumbered blocks saw significant final prices in many areas, there seems no need to lower the prices to start.*" The pricing outcomes in the 3500 MHz auction were distorted due to a number of factors, and

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<sup>110</sup> SaskTel's response to the Consultation, Paragraph 123.

should not be used as the basis for designing the 3800 MHz auction – especially not for encumbered spectrum (a view shared by Comcentric, Sogetel and Terrestar). On the contrary, the excessively high global outlier prices that Canada paid for 3500 MHz spectrum should cause ISED to give serious consideration to rethinking how it selects parameters such as opening bids and bid increments in its design of the 3800 MHz auction.

- b. If this reduction in the (unencumbered) population basis causes the service area to fall under a different service area category, its unit price should be adjusted accordingly.

### **Q30: Eligibility points, pre-auction deposits and final payment**

**Q30.** ISED is seeking comments on the proposed eligibility points for spectrum licences in the 3800 MHz auction as outlined in annex F, and pre-auction deposits as outlined above.

#### ***Eligibility points***

233. TELUS supports ISED’s proposed methodology for determining eligibility points for spectrum licences in the 3800 MHz auction, based on opening bids (an “eligibility point per dollar approach”, referred to herein as EP/\$). Most parties responding to the Consultation either did not answer this question (Bell, Cogeco, SSI, Videotron) or support ISED’s methodology for determining eligibility points (BCBA, CanWISP, Comcentric, Eastlink, Iristel, Rogers, SaskTel<sup>111</sup>, Sogetel, Terrestar, Xplornet).

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<sup>111</sup> SaskTel appears to incorrectly associate the reduction from \$5,000 of opening bid per eligibility point to \$3,000 per eligibility point as a reduction in required deposits; TELUS views SaskTel’s response as

234. In its initial comments TELUS recommended modifying this methodology by scaling down the \$/EP to approximately one eligibility point per \$500 of opening bid, following TELUS' recommendation for reduced opening bids and pro-rated opening bids for encumbered products in its response to Question 29. Iristel<sup>112</sup> supports the same pro-rated treatment.
235. Rogers<sup>113</sup> suggests a different mechanism for adjusting eligibility points and opening bids for encumbered spectrum, proposing that only heavily encumbered blocks (products with more than 30% encumbrance) have their opening bids and eligibility points reduced; Rogers proposes that lightly encumbered products (i.e., below 30% encumbrance) should have the same eligibility points as unencumbered products in the same service area to facilitate valuation-based switching between substitutable products. TELUS supports this reasonable proposal by Rogers.

### ***Pre-auction deposits***

236. TELUS supports ISED's proposed methodology for determining pre-auction deposits as described in the Consultation. To be consistent with TELUS' recommendation to reduce opening bids above, followed by a recommended scaling of the EP per \$ of opening bid (to approximately maintain ISED's proposed eligibility point levels), TELUS recommends adjusting pre-auction deposits to \$500/EP accordingly.

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supportive as this change only impacts scaling of eligibility points (but is based on the same opening bids as for unencumbered spectrum in the 3500 MHz auction).

<sup>112</sup> Iristel's response to the Consultation, Paragraph 77.

<sup>113</sup> Rogers' response to the Consultation, Paragraphs 302-303.

### ***Final payment***

237. TELUS notes that ISED has not sought feedback from stakeholders on the remaining subsections under Section 15 (Auction Process) in the Consultation. However, TELUS believes that given the proposed 3800 MHz transition policy, the subject of how to treat final payments in this auction process must be given careful consideration. TELUS, along with a number of other respondents, hold concerns about having to pay for spectrum which may not be usable for a number of years. Making such premature payments would consume capital that could otherwise be better applied to the deployment of new 5G urban and rural infrastructure, and thus runs counter to the government's stated policy objectives.
238. Bell<sup>114</sup> notes that *"It would be punitive for bidders to pay hundreds of millions of dollars for something they cannot use for several years. These are costs that would be borne today but would not contribute to the production of services and generation of revenue because the spectrum cannot be put to use... This will only serve to put even more upward pressure on wireless prices, further undermining the Government's policy objectives related to facilitating affordable and innovative wireless services."*
239. CWTA<sup>115</sup> draws a direct connection between early spectrum payments and the cost to consumers: *"[L]icensees will be required to pay amounts for licences that are not yet usable [and] will need to begin recovering these costs from subscribers even though subscribers are not yet able to benefit from the use of the licensed spectrum... ISED's proposed auction payment policy would directly harm Canadian wireless consumers."*

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<sup>114</sup> Bell's response to the Consultation, Paragraphs 126-128.

<sup>115</sup> CWTA's response to the Consultation, Paragraphs 35-37.



240. Rogers<sup>116</sup> links early payment to potential delays in the roll-out of 5G infrastructure: *“This would have the effect of tying up capital that could otherwise be invested in building out 5G coverage and capacity in the recently auctioned 600 MHz and 3500 MHz bands.”*
241. Finally, Xplornet<sup>117</sup> highlights that early payments for *“Requiring service providers to expend resources on spectrum that they cannot deploy and monetize imposes significant carrying costs on licensees, particularly smaller participants, and harms the ability for service providers to execute on their planned capital investments... frustrating the overall objective of the Spectrum Policy Framework.”*
242. In its response to Question 23, TELUS recommends that licences should have a “useful life” of approximately 20 years. The countdown to expiry should ideally not begin until the spectrum is sufficiently usable. This could vary in the case of FSS or urban WBS transition (March 2025), rural WBS transition (March 2027), or with regards to FSS coexistence in satellite-dependent areas (varying between immediately available and near indefinite, subject to earth station location and coexistence rules to be determined in future SRSP review). However, to simplify what might otherwise become a complex licence management process, TELUS recommends simply aligning licence expiry at 20 years following the most common transition date of March 31, 2025 (and thus ensuring all licences have an aligned expiry date of March 31, 2045).
243. TELUS agrees that licensees should make initial payments (e.g., 20% non-refundable payments due within 10 business days following the announcement of the auction

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<sup>116</sup> Rogers’ response to the Consultation, Paragraphs 245-249.

<sup>117</sup> Xplornet’s response to the Consultation, Paragraphs 5, 50-52, and 103-105.

outcome); however, consistent with the above recommendation, TELUS proposes that the 80% balance of final payment should not be due until licensees are prepared to put their spectrum to use.

244. TELUS recommends that the final payment and licence issuance process be licensee-driven, with payment being made and licences issued upon request, after a licensee deems that it views its spectrum as being ready for use. Such requests would not be permitted to exceed the first transition milestone (i.e., March 2025), when FSS and urban WBS transitions are complete.
245. If ISSED views this “on demand” process as being too much of an administrative burden, TELUS would recommend an alternative process following an annual cycle (similar to the prescribed timing cycles of the 3500 MHz transition process). Bidders could elect to have licences issued once final payment has been made immediately following the auction (i.e., 45 business days following the announcement of provisional licence winners); alternately, it could elect to make final payment and have licences issued on March 31, 2024, or on March 31, 2025. In all cases, TELUS proposes that licences be aligned with expiries on March 31, 2045 (as described in response to Question 23).

### **Q31: Licence renewal process**

**Q31.** ISED is seeking comments on the proposed renewal process for spectrum licences in the 3800 MHz band.

246. TELUS supports the proposed renewal process for spectrum licences in the 3800 MHz band.

247. TELUS notes that in its response to Questions 23 and 30, TELUS recommends that licences be issued no earlier than when prospective licensees believe the spectrum is sufficiently usable. Despite this proposal for a “staggered start”, TELUS recommends aligning the end date of licence terms to March 31, 2045 in its response to Question 23, which would support a simplified renewal process including a public consultation process in 2043.

## ANNEX A – Data sources for capacity ratios

**Table A1: National Metrics**

	Rogers	Bell	TELUS	Regional and rural operators
National spectrum holdings (MHz)	282.3	192.4	205.3	235.2
National 3500 MHz band holdings (MHz)	58.4	48.1	24.9	68.6
Potential post-3800 national spectrum holdings (MHz)	323.9	244.4	280.4	316.6
Subscribers (M)	11.30	11.71	11.42	5.5 (estimated)

**Table A2: Provincial Metrics**

	Rogers		Bell		TELUS	
	MHz	LWSP subscriber share (%)	MHz	LWSP subscriber share (%)	MHz	LWSP subscriber share (%)
BC	309.2	36.6%	157.9	21.0%	264.6	42.4%
Alberta	264.2	21.5%	135.9	25.1%	272.0	53.4%
Ontario	302.5	45.8%	227.9	31.8%	159.9	22.4%
Quebec	261.3	30.7%	179.1	37.4%	237.0	31.9%
Atlantic	267.7	11.1%	242.5	54.6%	120.9	34.3%

## Figure Data

**Table A3: Figure 1 – National spectrum capacity ratio in 3500/3800 MHz spectrum**

	Rogers	Bell	TELUS	Regional and rural operators
Today	0.91	0.72	0.38	2.19
Post-3800 (Option 2)	0.69	0.67	0.68	2.13

**Table A4: Figure 2 – National spectrum capacity ratio in all spectrum bands**

	Rogers	Bell	TELUS	Regional and rural operators
Today	0.96	0.63	0.69	1.64
Post-3800 (Option 2)	0.86	0.63	0.74	1.73

**Table A5: Figure 3 – Provincial spectrum capacity ratio in all spectrum bands**

	Rogers	Bell	TELUS
BC	0.92	0.82	0.68
Alberta	1.34	0.59	0.55
Ontario	0.72	0.78	0.78
Quebec	0.93	0.52	0.81
Atlantic	2.64	0.48	0.38

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