



**TELUS COMMUNICATIONS INC.**

**Comments for**

**Consultation on the Revisions to the  
2500-2690 MHz Band Plan**

SPB-002-26

January 2026

Spectrum Management and Telecommunications

**March 31, 2026**

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## Executive Summary

1. TELUS appreciates the opportunity to comment on the *Consultation on the Revisions to the 2500-2690 MHz Band Plan* (“the Consultation”)<sup>1</sup>.
2. The Spectrum Outlook 2023 to 2027 listed the BRS band as Priority 2 to consider proposals from industry stakeholders to convert the 2500-2690 MHz band to TDD-only use (incorporating the TDD-only Band 38 spectrum) to make an uninterrupted and contiguous 190 MHz block of TDD-only spectrum.<sup>2</sup>
3. TELUS applauds ISED for initiating a process through this Consultation to closely align with the U.S. band plan, enabling sustainable cross-border co-existence with U.S. carriers (all of whom use Band 41 in TDD mode).
4. The present differences in BRS band plans between Canada and the U.S. have caused significant interference issues in recent years, requiring operators to forgo use of key spectrum along the heavily populated border area. The current situation has forced U.S. and Canadian operators to agree significant compromises to each other’s networks in large population centres on either side of the border. This in turn has reduced network capacity and introduced customer experience issues, prompting Canadian and U.S. operators to negotiate a large number of bespoke and complex coexistence measures in multiple regions along the international border. A signed agreement between the relevant

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<sup>1</sup> *Consultation on the Revisions to the 2500-2690 MHz Band Plan*, Canada Gazette SPB-002-26, published January 2026. Link: <https://ised-isde.canada.ca/site/spectrum-management-telecommunications/en/learn-more/key-documents/consultations/consultation-revisions-2500-2690-mhz-band-plan>

<sup>2</sup> *Spectrum Outlook 2023 to 2027*, published August 2023. Link: <https://ised-isde.canada.ca/site/spectrum-management-telecommunications/en/spectrum-allocation/spectrum-outlook-2023-2027>

Canadian and U.S. licensees was signed in December 2024 with implementation of the necessary network changes by the affected Canadian operators occurring in March 2026.

5. The ultimate aim amongst Canadian licensees is frequency and time synchronisation alignment with the U.S. resulting from transition to an unpaired TDD-based spectrum band plan. Moving to the same band plan is a necessary step in resolving the long-term cross-border coordination issues.
6. However, an improvement in technical coexistence is not the only benefit that would accompany transition to a TDD band. Combining FDD uplink and downlink spectrum into contiguous TDD assignments will enable larger channel bandwidths, and TDD reciprocity will enhance the benefit of massive MIMO technologies. Both of these features will yield significant efficiency improvements as the 2500 MHz band is deployed (or redeployed) with 5G technologies and beyond.

### **Summary of TELUS' key proposals**

7. This transition represents a significant undertaking for the Canadian wireless industry. It is one that will require substantial capital investment, technical coordination, and regulatory clarity to succeed. TELUS submits the following proposals to ensure that the transition framework supports efficient spectrum utilization while maintaining the investment incentives necessary for continued network modernization and service delivery to all Canadians.
8. The fundamental challenge facing the industry is that FDD to TDD rebanding is not simply a matter of regulatory designation. Because of the extensive existing deployments in the band, it requires the replacement of radio equipment across multiple wireless

networks, the coordination of deployment timelines across multiple stakeholders and careful management of the transition areas and timelines to avoid service disruptions. These realities must inform ISED's policy decisions to enable the industry to effectuate transitioning to TDD with flexibility accounting for the stakeholder needs regionally and at a measured pace.

***Establishing a clear regulatory framework***

9. TELUS recommends that ISED adopt a defined TDD band plan that provides the regulatory certainty necessary for investment planning. This band plan, similar to the U.S. should include the frequencies 2496-2500 MHz, would maximize equipment alignment (and thus, availability), minimize unnecessary certification differences, and support the ecosystem development required for future technology cycles. A timely decision on this matter, followed shortly thereafter with a new Radio Standards Specification (RSS) for the band, are both essential for network operators to prepare for the transition. Moreover, publishing updated standards in a timely manner is critical for infrastructure vendors to develop and certify radios for the Canadian market so that equipment becomes available in advance of the first transition timeline.
10. TELUS also proposes that ISED consult as soon as practically possible on the Standard Radio System Plan (SRSP) to ensure that technical frameworks support efficient deployment and coexistence during and after the transition periods.
11. Having both the RSS and SRSP will be critical to ensuring that operators can implement the transition smoothly and that the resulting n41 ecosystem is easily adopted into the Canadian market.

12. Finally, given that BRS licences of different origins (2015 auction, residual auctions, and legacy transitions) have dramatically different attributes (e.g. expiry dates, deployment requirements, etc.), any framework must preserve these fundamental attributes through the transition. TELUS recommends ISED adopt an interim overlay licence approach which aligns with the solution being applied to mitigate cross-border coexistence issues today.

### ***Supporting flexible transition timelines***

13. The cost of radio replacement associated with this FDD to TDD transition is substantial. As such, a flexible approach to transition that acknowledges that operators transitioning their networks face competing capital priorities and must balance the costs of equipment replacement with the need to maintain service quality across their existing footprints is essential.
14. TELUS proposes that ISED allow stakeholders themselves to determine the timing and market-by-market implementation requirements (e.g. defined transition cutover date and market specific priorities) for the transition. Rather than imposing prescriptive milestones and deadlines, ISED should establish a framework which enables industry-led decisions on licence assignments, and transition milestones while not altering the value of the underlying spectrum asset. A stakeholder-driven approach respects these important aspects while maintaining overall progress toward the transition objective.

### ***Pausing assessment of deployment requirements***

15. Given the significant technical shifts anticipated, ISED should prioritize regulatory flexibility over rigid compliance that undermines the transient nature of deployment

levels during this undertaking. TELUS supports a pragmatic approach to Conditions of Licence (CoL) assessments that recognizes the operational complexities of the transition period.

16. TELUS recommends ISED pause its assessment of compliance with BRS FDD deployment requirements under a BRS TDD transition policy. Assessing deployment obligations while a transition is either pending or actively underway creates unnecessary administrative burden and may lead to distortions to market deployment that negatively impact the Canadian market.
17. Furthermore, it would be unreasonable for ISED to expect licensees to meet strict deployment requirements at the expiry of licences in 2035 if transition is either incomplete or has only recently completed. Licensees require a reasonable "ramp-up" period to deploy equipment and optimize their TDD networks under new technical specifications before being held to high-density deployment milestones.

***Linking the network investment to renewal***

18. In order to ensure the regulatory clarity required for such a significant undertaking as TDD transition, ISED should consult shortly after issuing a decision on this Consultation to determine the eligibility criteria for BRS licence renewals in 2035 and 2038. TELUS proposes that any licensee that has already demonstrated compliance with the mid-term deployment requirements (e.g. in 2025) should automatically qualify for renewal, regardless of their state of deployment during the renewal period.

### ***Spectral contiguity is foundational of network efficiency***

19. Frequency contiguity is fundamental to realizing the full technical and economic benefits of the FDD-to-TDD transition. By consolidating existing FDD uplink and downlink spectrum allocations into a single contiguous TDD allocation, Canadian operators will achieve significant operational and technical efficiencies that fragmented spectrum cannot provide. Contiguous spectrum enables the deployment of wider channel bandwidths (benefitting modern 5G and future 6G implementations), which directly translates to increased spectral efficiency, higher data throughput, and improved network capacity.
20. Achieving frequency contiguity through this transition is therefore not merely a technical convenience; it is a prerequisite for Canadian operators to deliver the network performance that Canadian consumers and businesses increasingly demand.

### ***Conclusion***

21. TELUS contends that a feasible transition framework demonstrating good governance combines:
  - a. Stakeholder-determined timelines;
  - b. Paused assessment of deployment requirements;
  - c. Seamless transition of licence conditions between FDD and TDD; and
  - d. A near term decision on future licence renewal eligibility which recognizes existing network deployment.

TELUS considers that this approach will facilitate an orderly, cost-effective transition that maintains industry investment incentives, ensures regulatory certainty, and ultimately



supports long term use for 5G Advanced and 6G to deliver the benefits of efficient spectrum utilization to Canadians.

22. Throughout this consultation process, TELUS advocates that ISED adopt the principle of being as unintrusive and minimally restrictive as possible during what will certainly be a disruptive period of network overhaul for MNOs.
23. The detail behind TELUS' recommendations and TELUS' comments in response to the various questions raised by ISED follows in the main body of this document.

## TELUS' comments on specific questions posed by ISED

### Q1: Rebanding the BRS band plan to TDD

**Q1.** ISED is seeking comments on its proposal to revise the band plan to an unpaired band plan in 2500-2690 MHz.

In providing comments, respondents are requested to include supporting rationale and arguments.

24. The historical divergence between Canada's 2010 adoption of the ITU FDD band plan and the US commitment to a TDD band plan (n41) has reached a delicate tipping point. Whilst Canadian operators originally favoured FDD to leverage the more mature Band 7 ecosystem, the aggressive expansion of U.S. 5G TDD networks has made cross-border interference a critical operational hurdle. Current mitigation strategies include licensees swapping blocks to share the interference burden while accepting secondary spectrum access in a subset of cross-border markets. Both are inefficient solutions that effectively waste significant amounts of this vital spectrum for two-thirds of the Canadian population. These coexistence measures are increasingly unpalatable and spectrally inefficient, highlighting a growing problem that requires a more permanent and spectrally efficient solution than current coordination agreements can afford Canadian MNOs.
25. TDD use is technically superior to FDD use of the same spectrum for advanced antenna technologies (e.g. active antenna systems employing massive MIMO) in 5G and beyond. Because the uplink and downlink in such systems use the same frequency, channel reciprocity allows base stations to predict downlink signal paths using pilot symbol estimates in the uplink. As a result, base stations can aim beams accurately at devices,

significantly boosting capacity without incurring a costly penalty of providing direct feedback of channel estimates. As licensees deploy 5G in other TDD bands (most notably 3500 and 3800 MHz), New Radio (NR) has fundamentally changed the intrinsic technical capability of spectrum licensed as TDD versus FDD.

26. TELUS strongly agrees with ISED's rationale that transitioning to a TDD band plan is the most effective way to harmonize with the U.S. market to resolve persistent interference. Canadian MNOs also stand to benefit from the global economies of scale now offered by the n41 ecosystem in the U.S. and globally. The TDD band plan should align fully with the band plan and allocation of 2496-2690 MHz (including the technical rules) found in the U.S. to ensure there are no encumbrances on both infrastructure and device certification for the Canadian market.
27. It is worth noting that in its November 2020 Decision<sup>3</sup>, ISED declined to approve the portion of Globalstar Canada's request for ATC authority that addressed the 2495-2500 MHz frequency range. TELUS notes aligning with the U.S. via the inclusion of 2496-2500 MHz in the flexible use TDD band plan would require the addition of a co-primary mobile allocation and the revision of Canadian Footnote C38<sup>4</sup> to restore co-primary status of the fixed service in that frequency range.

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<sup>3</sup> *Decision on Globalstar Canada's Application for Ancillary Terrestrial Component (ATC) Authority in the 2.4 GHz Band (2483.5-2500 MHz)*, Canada Gazette SMSE-009-20, published November 2020. Link: <https://ised-isde.canada.ca/site/spectrum-management-telecommunications/en/learn-more/key-documents/c consultations/decision-globalstar-canadas-application-ancillary-terrestrial-component-atc-authority-24-ghz-band>

<sup>4</sup> *Canadian Table of Frequency Allocations*, 2022 Edition. Footnote C38 reads "C38 (CAN-04) In the frequency band 2 483.5-2 500 MHz, the fixed service has been reduced to secondary status with the implementation of the Low Earth Orbital (LEO) mobile-satellite service in Canada." Link: <https://ised-isde.canada.ca/site/spectrum-management-telecommunications/en/learn-more/key-documents/c consultations/canadian-table-frequency-allocations-sf10759>

28. TELUS recognizes that migrating from FDD to TDD is a complex undertaking involving hundreds of millions of dollars in collective industry costs, including the development of new radio equipment, replacement of existing FDD radios and other operational expenses associated with a truck roll and site works at nearly every site in multiple networks. However, this approach is still the best feasible path to ensuring all Canadians have access to this strategically important spectrum. TELUS commends ISED for advancing a TDD transition roadmap for the BRS spectrum.

## Q2: Transition timing

**Q2.** ISED is seeking comments on whether starting the transition to an unpaired band plan in 2028 is appropriate and how long licensees may require to complete the transition.

In providing comments, respondents are requested to include supporting rationale and arguments.

### *The regulatory starting line*

29. As a fundamental principle, ISED should not consider the imposition of a mandatory start date (i.e. 2028) or timeline for BRS rebanding. Rather, ISED's role in the rebanding process should firmly focus on facilitating and establishing the necessary technical and regulatory conditions as soon as practically possible, thereby permitting licensees to transition from FDD to TDD at an optimal time that is mutually negotiated by industry.
30. This approach ensures that each operator can start and complete transitioning within the industry's currently discussed regional phases and time window that accommodates all BRS licensees whilst recognizing and allowing different parts of the country to start and finish at different points in time. TELUS's view of the regional phases are shared in its response to Question 4.
31. Critically, the Consultation's proposed 2028 transition start is impractical. Before any transition can begin, ISED must publish a full TDD band plan and policy framework and establish the technical RSS and SRSP standards. Based on TELUS' past experience, infrastructure vendors generally require a minimum lead time of approximately two years from the publication of final technical standards and band plan decisions to develop, test, and deliver new TDD-capable equipment. TELUS considers that from an equipment

availability viewpoint alone, the initial transition readiness in the Canadian markets would not be feasible until 2029-2030.

***Regulatory preconditions for a feasible transition roadmap***

32. Before the transition can proceed, TELUS identifies the following critical preconditions that must be satisfied:

- a. **Establishment of a band plan:** ISED must develop a TDD band plan (in consultation with the industry) and appropriately revise spectrum allocations in the Canadian Table of Frequency Allocations (as discussed in TELUS' response to Question 1) to create optimal alignment with the U.S. band plan and the 3GPP Band 41. The band plan must entail the minor expansion of the current allocation to span 2496-2690 MHz to primarily leverage the U.S. ecosystem of radio and devices. The revised Canadian band plan should:
  - i. Maintain the existing 10 MHz block size (noting the new exception of 2496-2500 MHz<sup>5</sup>);
  - ii. Allow for the restricted bands of two 5 MHz blocks (in band 38) to be united in a contiguous block (i.e. to merge into a 10 MHz block), whether the sub-blocks have two different licensees or just one (e.g. today ISED holds the other split half);
  - iii. Apply Tier 3 licensing that is consistent with the existing policy and licensing regime.

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<sup>5</sup> ISED's policy decision does not need to assign the 2496-2500 MHz spectrum as a precondition for rebanding.

- b. **Finalization of 2500 MHz technical standards:** It is essential that ISED revise RSS-199 as a critical next step following a TDD band plan decision to afford equipment vendors a couple of years to develop radios that leverage the latest TDD technologies for certification and commercial delivery that is compatible with the needs of the BRS licensees. Shortly afterward, ISED must revise SRSP-517 to facilitate coexistence of post-transitioned TDD operations between BRS licensees (and other services) to clarify final operational rules for network design that may differ from transitional operational measures.
- c. **Reassignment of licences from FDD to TDD:** The framework needs to require all current BRS holdings to be reassigned as contiguous TDD blocks of equivalent quantities. Any updates to the policy and licensing framework for the band must facilitate the assignment of post-transition frequencies and determined through an industry-led process. This framework must also ensure interference free TDD operations following an industry determined transition date per area. ISED can support this process by issuing interim overlay licences to support TDD operations during transition (i.e. prior to the expiry of primary FDD licences and before renewal under a new band plan, according to frequency assignments determined as the output of an industry consensus process.)
- d. **Definition of a licence renewal process following a transition decision:** It is critical that ISED provides a decision on renewal criteria affecting existing licences which acknowledge that spectrum has been put to use either before or after transition. Please refer to TELUS' response to Question 3.

33. These preconditions are essential to provide regulatory certainty, thereby enabling operators to make informed capital investment decisions and allowing equipment vendors to develop products aligned with the final technical and regulatory framework.

***An industry-led approach for transition timelines***

34. International precedents for a transition of this magnitude in markets of comparable scale and infrastructure maturity, including the United States, remain exceedingly rare. While Germany and the United Kingdom have implemented localized variations of FDD-to-TDD rebanding, these examples lack the structural and operational parallels required to serve as a direct template for the Canadian environment.
35. Jurisdictions such as Qatar have mandated<sup>6</sup> a transition from FDD to TDD in the 2.6 GHz band; however, their seven-month implementation window is ill-suited for the Canadian environment. Canada's market is significantly more mature, supporting millions more subscribers on heavily utilised networks. Unlike the Qatari model, a Canadian transition requires a long-term 'glide path'.
36. TELUS appreciates ISSED's recognition that the transition to an unpaired TDD-use band plan is complex and must accommodate operators' differing capital investment cycles. Many licensees have already procured and deployed FDD equipment. TELUS has recently deployed FDD equipment to new regions, and TELUS anticipates continued investment in FDD equipment leading up to a TDD transition decision in order to sustain and grow network capacity given that Band 7 is a workhorse band for 5G. These series of

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<sup>6</sup> *CRA Issues Decision to Mobile Service Providers to Enhance Consumers' Experience*, published September 2024. Link: <https://www.cra.gov.qa/en/press-releases/cra-issues-decision-to-mobile-service-providers-to-enhance-consumers-experience>



investments, for all MNOs, represent significant capital outlays in the order of hundreds of millions of dollars that require several years of useful operation for our customers. Investing in new TDD radios will take large amounts of capital and time, thus the need for multiple regions over a series of transition timelines for each to make it manageable for all operators.

37. TELUS is a founding member of an industry-led stakeholders approach and continues to support a principled approach that contemplates the completion of BRS transition at staggered dates across three distinct regions. In the latest stakeholder discussions, these dates were proposed at 2033, 2035 and 2036, with the vast majority of the country transitioning by May 2035<sup>7</sup>. Beyond each notional cut-over date, FDD operation would no longer be permitted in that region, enabling BRS licensees with TDD radio deployments to operate unconstrained by FDD interference.
38. An industry-led three phase transition permits staggered equipment deployment, spreading the capital investment across multiple years and allows operators to align spectrum modernization with largely unaccelerated network refresh cycles. The industry knows best the reality on the ground and must retain flexibility to optimally manage the transition timeline in a manner that both minimizes service disruption and maximizes connectivity for Canadians.
39. TELUS reminds ISED that the industry is best positioned to develop and manage the detailed transition plan, as recognized by ISED in the Consultation. The complexity of accommodating existing FDD deployments, managing spectrum contiguity for legacy

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<sup>7</sup> ON, QC excl Gaspé peninsula (May 2033); NB, NS, PE, NL, BC, AB, SK, MB incl Gaspé peninsula (May 2035); YT, NT, NU (May 2036)

operators and coordinating the phased transition across the three geographic regions requires detailed operational knowledge and flexibility that only industry participants collectively possess.

40. This collaborative approach allows industry to manage the detailed logistics of the transition while ISED provides the regulatory foundation necessary to ensure the transition serves the interest of all Canadians.

***Issuing interim overlay TDD licences while FDD licences are still in effect***

41. Industry will require ISED to address the significant regulatory transition complication caused by the heterogeneous nature of existing 2500 MHz licence characteristics. Currently the band is a patchwork of licences with disparate expiry dates, staggered mid-term assessment dates, and vastly different licence fees obligations; including auctioned licences with no fees and legacy transitioned licences subject to annual fees that are operator and fee tier specific. These differences create a ‘valuation gap’ between licensees that complicates the TDD transition through licence exchanges under the spectrum transfer framework<sup>8</sup>. Transferring entire licences with different attributes (expiry dates, deployment requirements, etc.) is commercially untenable.
42. ISED could enable a new framework for licence novation<sup>9</sup> to address the disparity in licence attributes to address the disparity in licence attributes. Under this approach, operators would swap their assigned frequency blocks while the original expiry date, fee

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<sup>8</sup> CPC-2-1-23, *Licensing Procedure for Spectrum Licences for Terrestrial Services*, Issue 7, published November 2024. Link: <https://ised-isde.canada.ca/site/spectrum-management-telecommunications/en/learn-more/key-documents/procedures/client-procedures-circulars-cpc/cpc-2-1-23-licensing-procedure-spectrum-licences-terrestrial-services>

<sup>9</sup> The substitution of a new obligation or contract (e.g. licence) for an old one by the mutual agreement of all parties concerned.

structure, and specific conditions remain with the original holder. This streamlined process would ensure that the regulatory attributes of a licence remain unmodified, providing long-term investment certainty while allowing frequency swaps to create contiguous TDD assignments.

43. As an alternative, ISED could apply an approach similar to that which has been implemented to support the current mitigation strategies in border areas. ISED could issue interim overlay licences (i.e. instead of secondary subordination and only for the interim period) to authorize operations in post-transition spectrum assignments, whilst licensees continue to hold their primary licences. Upon expiry of primary licences (simultaneously with the interim overlay licences), the pre-transition assignments would cease and licences would be issued for a new renewal term according to interim overlay spectrum licence assignments only, while adopting the condition of licences of a yet-to-be-determined renewal policy for the existing licences. This licensing mechanism and approach would remove the aforementioned ‘valuation gaps’ that would result from licence swaps using the spectrum transfer framework.
44. To address the complications of mismatched licence attributes during the transition to a TDD band plan, TELUS recommends ISED assign interim overlay licences according to new TDD assignments as a bridge to enable both transition and renewal.
45. The overlay repacking process should be managed collaboratively by industry stakeholders, with ISED establishing an enabling regulatory framework as part of the band plan decision. The subsequent industry-led process will provide operators with their post-transition spectrum assignments to enable early network planning.

### Q3: Deployment requirements

**Q3.** ISED is seeking comments on whether deployment requirements should be adjusted in anticipation of transition to the new band plan.

In providing comments, respondents are requested to include supporting rationale and arguments.

46. The transition from a combined FDD/TDD band plan to a TDD only (n41) band plan necessitates the replacement of legacy FDD radios with TDD capable equipment. To accommodate the significant technical complexity and the high capital costs associated with a full-scale radio replacement across existing networks, ISED is correct to consider whether deployment requirements should be adjusted. In particular, TELUS recommends ISED focus on *when* to assess the requirements.
47. TELUS agrees with ISED that all regulatory assessments should be paused until a decision is reached on the rebanding of 2500-2690 MHz. There will be several phases of transition where FDD and TDD deployments will exist in different transition areas. This begins with the first Band 41 radio deployment in a multi-year replacement program in region one and ends with the final FDD-to-TDD transition cut-over of region three.
48. Deployment requirements are intended to ensure spectrum is used for the benefit of Canadians. However, enforcing any build requirements during transition (e.g. prior to the 2025 delayed assessment or potentially a delayed 2028 assessments) is counterproductive. Pausing the deployment assessment until post transition recognizes the transient nature of the deployment state at any point in time of the transition period.

49. ISED should only assess deployment requirements for licences considered for renewal, which typically occurs in the final year of a licence term. TELUS notes that FDD radios in Band 7 have been extensively deployed nationally, providing critical mid-band capacity depth necessary to support the growing data demands of Canadians. Furthermore, as a result of significant investments in deploying Band 7 across our network, TELUS has met and continues to meet the 10-year deployment conditions. Moreover, the importance of this band for 5G capacity is such that TELUS plans to continue adding Band 7 radios despite the foreseen transition as a result of this consultation. It is only reasonable for ISED to recognize any investments by the industry when assessing licences for eligibility of renewal.
50. TELUS considers that ISED should also allow for licensees to be assessed at any time up to and including the end of the licence term. Rather than following the typical process of consulting on licence renewal in the year prior to licence expiry, TELUS recommends ISED consult and publish an early renewal policy decision that focuses only on establishing deployment requirements as a necessary condition to be eligible for a renewed licence term. This approach provides licensees with a flexible pathway to demonstrate renewal eligibility while maintaining regulatory clarity.
51. Given that there are only mid-term requirements (e.g. 10-year for auctioned licences; 4-year and 14-year for renewed licences) for the first wave of licences expiring in 2035, TELUS recommends that ISED assess the state of deployment as originally set in the conditions of licence and if the minimum coverage requirement was met, licensees automatically qualify for a renewed term. In other words, licensees that have already met,

or would meet their upcoming, mid-term deployment requirements using FDD should receive confirmation of their eligibility for renewal licences in a subsequent term under the new band plan. The confirmation of renewal eligibility should stand regardless of their state of TDD deployment at the end of their current licence term. Such an approach would provide the sufficient and necessary regulatory certainty for operators to commit significant investment in new TDD infrastructure. This is appropriate to acknowledge the benefit that has been delivered to Canadians already (having put spectrum to good use and continues being put to good use with TDD) while avoiding the uncertainty of the assessment criteria near the term expiry and whether the resulting TDD replacement coverage is sufficient.

52. For clarity, TELUS envisions its TDD deployment will match, if not exceed, its current FDD deployment, thus meeting the mid-term requirements should that become a renewal requirement. TELUS understands there is a risk, however small, that some licensees may not meet the requirement at the end of the term, especially in light of current industry transition timelines being so close to renewal and given the significant investment and scope of the transition. That risk of not being eligible for renewal may delay transition and investments unless ISED clearly establishes eligibility requirements well in advance.

#### Q4: Preliminary considerations for a transition plan

**Q4.** ISED is seeking preliminary comments on a transition plan to the proposed band plan, including:

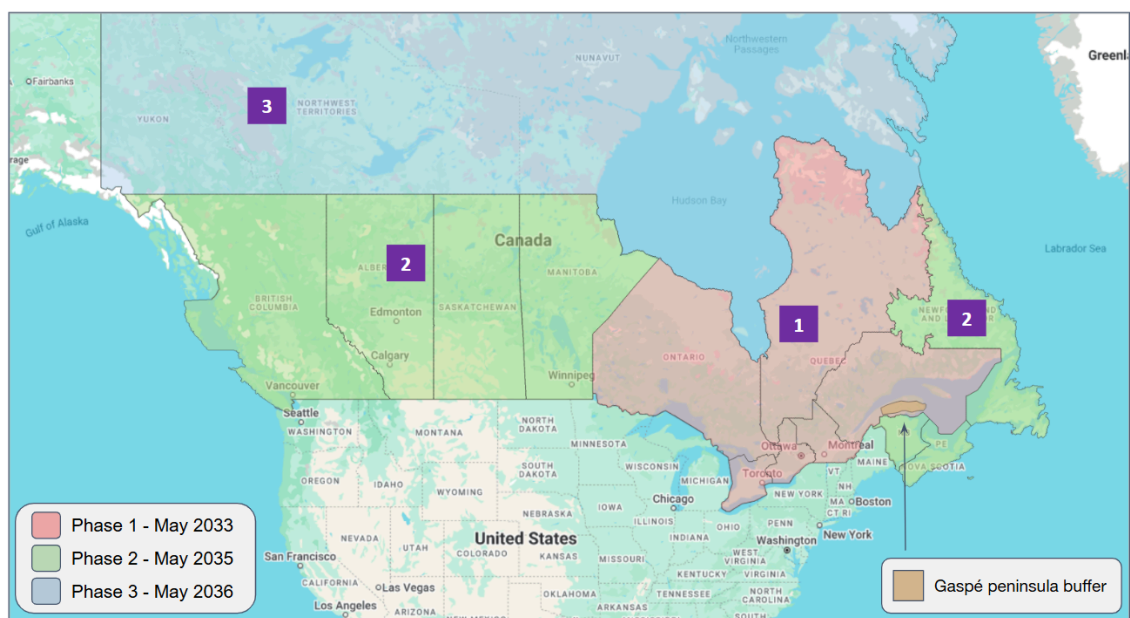
- a. should the transition strategy be implemented on a market-by-market basis across Canada? If so, which regions should be prioritized and how should the timelines be staggered?
- b. should certain portions of the band, such as the Canadian FDD uplink spectrum, be prioritized first during the transition?
- c. do licensees prefer holding contiguous blocks of spectrum in an unpaired TDD-use band plan? If so, what process is envisioned to enable the exchange of frequency assignments?
- d. what is the appropriate tier level for the transition and how might the deployment requirements be adjusted to reflect this?
- e. are there any temporary or longer term technical requirements that ISED should consider to minimize the potential for interference conflicts during the transition period?
- f. are there any other key elements that ISED should consider for a transition plan?

In providing comments to the above questions, respondents are asked to include supporting rationale and arguments.

##### ***(a) Industry defined transition zones***

53. TELUS is adamant that allowing industry to negotiate transition areas and define transition timelines is a fundamental requirement for the successful implementation of a BRS TDD band transition.
54. Today, BRS FDD serves as a capacity workhorse for TELUS' network, providing the critical mid-band depth necessary to support the growing data demands of Canadians nationally. Given its key role for high capacity LTE and 5G services, any transition must be managed with careful consideration to avoid service degradation. A rigid, regulatory defined area and/or timing may not account for the operational realities of maintaining the much needed capacity that BRS FDD offers, while simultaneously overhauling the underlying band.

55. As ISED is aware, all BRS licensees nationally have been actively engaged in an industry process since mid-2024 and working collaboratively on a plan for a TDD transition. Licensees have collectively discussed a joint proposal for spectrum transition from FDD to TDD for the 2500 MHz band. The joint proposal identified the primary requirements of maintaining continuous service throughout the transition period while minimizing implementation complexity.
56. From a geographic and service area perspective, stakeholders discussed transitioning regions of Canada in a staggered manner to balance the scope of transition with the risk of harmful interference from introducing additional borders for TDD-FDD coexistence. The resulting proposal accomplishes this largely by selecting large regions separated by areas of relatively low population density (and accordingly, low deployment density) and geographic features. Figure 1 shows the proposed delineation of transition areas<sup>10</sup>.



**Fig 1: Industry stakeholder preferred delineation of transition zones with tentative dates**

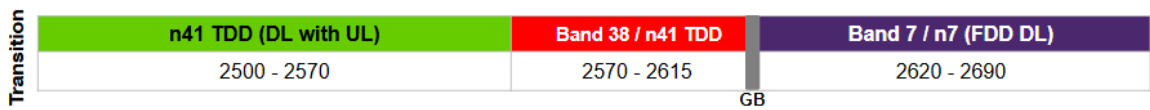
<sup>10</sup> ON, QC excl Gaspé peninsula (May 2033); NB, NS, PE, NL, BC, AB, SK, MB incl Gaspé peninsula (May 2035); YT, NT, NU (May 2036)



57. The breakdown in transition regions is designed to incorporate the fewest number of transition areas by aligning them with natural geographic barriers and Tier 2 service areas. The exception to this is the Gaspé peninsula which was preferred to transition at the same time as the maritime provinces of New Brunswick, Nova Scotia, Newfoundland & Labrador and PEI.

***(b) No prioritization of any portion of band***

58. TELUS recommends that ISED defer the specifics of transition sequencing and band prioritization to industry-led agreements. A ‘top-down’ prioritization of certain spectrum portions risks creating technical bottlenecks and increasing implementation complexity. Instead, the transition should be viewed through the lens of network reliability, where the timing is dictated by the industry’s ability to maintain service continuity when transitioning from FDD to TDD operations.
59. BRS licensees have analysed various potential solutions to ensure coexistence throughout transition. Initially, a technical solution was identified whereby the uplink (UL) portion of the band 7 would be turned off during the transition period, thus making room for a potential n41 operation in the UL portion, as illustrated in Figure 2.



**Fig 2: Preliminary proposal for simultaneous TDD + FDD DL coexistence during transition**

Under this approach, the TDD portion (Band 38) would also be protected from any interference originating from Band 7 operation.

60. Subsequent analysis of the UL capacity needs for multiple MNOs revealed that a long period with reduced UL would cause significant UL capacity challenges. As a result, the current industry view has evolved to continue using the UL in the 2500 - 2570 MHz portion, which would thus negate the possibility of a series of partial band transitions over phases in time. This has instead been replaced with a “cut-over” to TDD at specific coordinated transition dates. Downlink-only operation of TDD radios in the Band 7 downlink (DL) portion of the band is still possible, although it is not likely that anyone would operate n41 radios in the DL only portion before the effective transition date (e.g. not before May 2033).
61. TELUS does not recommend certain portions of the BRS FDD band be prioritised over others when transitioning. The technical consensus among stakeholders suggests that a staggered geographic migration is far more effective than a frequency-first approach. By focusing on regional transitions that utilize geographic features to insulate potential interference, operators can ensure that the move to TDD does not compromise network performance. A holistic, region-by-region transition allows for a more controlled environment where harmful interference is minimized and the integrity of the 2500 MHz band is preserved for users.

***(c) Contiguity of blocks***

62. Whilst technical standards will usually mitigate against some of the inefficiencies inherent in disparate block assignments – most pronounced in FDD duplex pairing scenarios – few benefits outweigh a network having contiguous spectrum.
63. TELUS strongly supports the creation of large contiguous spectrum allocations as a fundamental outcome of the transition to a BRS TDD band plan. Combining all former portions for each licensee's blocks (i.e. DL and UL) into contiguous blocks of spectrum will significantly enhance the efficiency and performance of future networks. 5G and future 6G standards are optimized for wide-channel bandwidths because contiguous spectrum is more spectrally efficient which directly translates to higher peak data rates and increased overall network capacity. Establishing contiguous BRS TDD blocks ensures that Canada's mid-band holdings are future-proofed.
64. Following a decision to transition to a TDD band plan, licences should be rearranged such that all existing FDD and TDD licences for a given licensee should be brought together to create contiguous TDD blocks. Ensuring spectrum holdings for every licensee are self-contiguous within the new band plan is not merely a preference; it is a technical necessity to maximize the usability of the 2500 MHz band and ensure that Canadian consumers benefit from the full potential of 5G and 6G technology.

***(d) Geographic aspects of transition***

65. As discussed in TELUS' response to sub-question (a) above, industry stakeholder discussions have identified three large transition geographies which involve groups of Tier 3 areas selected in such a way as to ensure minimal interference between the regions.

66. Given the key feature of this design is to minimize service disruption (i.e. to maintain FDD service in all un-transitioned geographic areas until a cut-over to TDD), TELUS does not foresee any specific need to adjust deployment requirements to accommodate the geographic aspects of transition. However, as discussed in TELUS' response to Question 3, ISED should relax the assessment timeline for deployment and importantly must establish renewal eligibility criteria well in advance.

***(e) Technical considerations***

67. Equipment vendors have indicated a minimum lead time of two years to develop, test, certify new radios in advance of any deployment. As such, TELUS requests that ISED begin the process of updating 2500 MHz standards (RSS-199/SRSP-517) with a goal that the technical standards be completed at least two years prior to commencement of the transition. This will enable operators to effectively plan collaboration with infrastructure vendors on new radio designs and to schedule network deployments. Furthermore, we propose that ISED consult through a RABC process, taking input from industry stakeholders to develop the RSS and SRSP. Such a process should ensure the standards reflect contemporary technological capabilities and operational requirements.
68. TELUS notes that an updated version of SRSP-517 need not prescribe technical coexistence measures that would apply during transition. Unlike in the 3500 MHz and 3800 MHz transition processes (which necessitated "Transition Manuals" to define clear measures for the treatment of incumbent services), such measures in the 2500 MHz transition can and should solely be defined through mutual agreement between licensees.

*(f) Additional considerations*

69. TELUS has no comment at this time regarding any other key elements not already addressed in its response above.

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