

Joint Response by the Internet Society, the Indigenous Connectivity Institute (an initiative of Connect Humanity), and Mozilla Corporation to Innovation, Science and Economic Development's (ISED) Consultation on a Non-Competitive Local Licensing Framework, Including Spectrum in the 3900-3980 MHz Band and Portions of the 26, 28 and 38 GHz Bands.

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<https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11793.html#s5>

General and Reply Comments

In April 2022, the Government of Canada signed on the Declaration for the Future of the Internet. In a media release, it noted this demonstrated its commitment to supporting an Internet that is open, trusted, interoperable and secure for the benefit of all Canadians.

To uphold its commitment to connect all Canadians and promote an Internet that is truly open, the Government of Canada must make a concerted effort to consistently consider whether policies are supporting what the Internet needs to exist and thrive as an open, globally connected, secure and trustworthy resource for all¹. This includes spectrum management.

In *Enablers of an Open, Globally Connected, Secure and Trustworthy Internet*², the Internet Society defines an open Internet as one in which anyone may create, use or deploy it according to their own needs and goals. For an Internet to be fully open, anyone should be free to create networks and add services and applications on the Internet.

¹ The Internet Way of Networking: Defining the critical properties of the Internet. Internet Society. Sept 2020. <https://www.internetsociety.org/resources/doc/2020/internet-impact-assessment-toolkit/critical-properties-of-the-internet/>

² Enablers of an Open, Globally Connected, Secure and Trustworthy Internet. Internet Society. Nov 2021. <https://www.internetsociety.org/wp-content/uploads/2021/11/Enablers-of-OGST-EN.pdf>

There are many obstacles that prevent the ‘easy and unrestricted access’ and ‘available capacity’ needed to uphold a truly open and globally connected Internet. This includes both the challenges for underserved users to access fast, affordable, and reliable Internet, and the barriers for communities to deploy and drive their own Internet access solutions. Indigenous communities are among the most underserved communities in Canada, with less than one quarter with access to broadband speeds. And while there are many case studies across North America showing how Indigenous communities can drive solutions to close the digital divide, high costs, administrative overhead, barriers to spectrum access, and a complicated policy environment pose significant hurdles for many communities across Canada.

The Government of Canada has an important duty to uphold its commitment for an open and globally connected Internet, especially as it is an essential service required to achieve many of the 2015 Truth and Reconciliation Commission of Canada’s Calls to Action. Hence, it is important for ISED to consider how spectrum policy, funding and capacity building initiatives are developed in a way that empower Indigenous communities to drive solutions for fast, affordable, and reliable Internet. And as Eeyou Communications Network points out in response to the present consultation, it is crucial that ISED adopts more simple and inclusive approaches spectrum policy development consultations to get more input from Indigenous parties on how to close the digital divide.

While ISED has conducted a number of successful spectrum auctions, an unfortunate side-effect of the high prices paid via auction is that small network operators are effectively excluded from the use of IMT spectrum bands. As the previous spectrum auction has provided substantial amounts of spectrum to national operators, we believe that access to IMT spectrum for smaller operators both commercial and non-profit should be a priority for ISED. In particular, we believe that should include affordable, non-competitive, localised access to spectrum for small operators both commercial and not-for-profit.

Until fairly recently, even if IMT spectrum were available to small operators, the requirements for operating an IMT network were beyond their reach due a combination of the high cost of network equipment and the complexities of negotiating voice interconnection arrangements with incumbent operators. However, the emergence of data-only LTE operators both in access networks and Fixed Wireless Access (FWA) networks have dramatically reduced the complexity of operating an LTE or even 5G network. Interconnection can now be handled in the same manner as any Internet Service Provider (ISP) through peering and transit agreements.

Furthermore, the cost of LTE / 5G radio technologies has plummeted, bringing base station costs within the same orders of magnitude as licence-exempt wireless equipment. A highly

competitive manufacturing market has brought prices down to where they are within reach of small ISPs and community networks.

What holds small operators and community networks back from taking advantage of these affordable access technologies is access to IMT spectrum. Therefore we applaud ISED's decision to explore more granular mechanisms for the assignment of spectrum in both this and last year's consultation on New Access Licensing Framework, Changes to Subordinate Licensing and White Space to Support Rural and Remote Deployment³.

It is evident that a great deal of thought has gone into the various dimensions of a non-competitive local licensing framework. While there is an understandable desire to think through all the possible ramifications of a new framework like this and to build in as many contingencies as possible, we encourage ISED to adopt as simple a framework as possible initially. The benefits of a simple approach are two-fold. First, a simple framework will lower the barrier to adoption, especially for new and smaller operators. Second, a simple framework will make it easier for ISED to learn and adapt the framework to the inevitable changes that real-world use will demand.

Response to Individual Questions

Q1

...its proposal to implement a FCFS spectrum licensing system for its non-competitive local licensing framework.

We support the use of a First Come First Serve (FCFS) license assignment process. FCFS assignment should include the opportunity to include priority for Indigenous operators.

A potential downside of FCFS might be delays on the part of ISED in the issuance of licenses. This could be mitigated by setting responsiveness standards for license application response. We generally agree that fully Dynamic Spectrum Assignment is likely to be the future of spectrum assignment but believe that a more hands-on approach right now is likely to lead to better outcomes in the short term.

³ <https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11717.html>

Q2

...the appropriate basis to establish local licence areas for the NCL licensing framework:

1. a radius-based licence area (option 1)
2. a custom vector-based licence area (option 2)
3. some other method

It is very difficult to say in advance of the introduction of this license what the most effective method is as there are many factors that may change across geographies and communities. Accordingly, we propose that ISED's decision on the geographic area of a NCLL be guided by simplicity. After consulting with an active licensee of both Shared Access and Local Access licenses in the UK, we suggest that a simple point radius of 25km be used for the NCLL. Complexity in licensing is something that can grow with the experience of using the license.

Q3

...whether the same spectrum licensing areas should be used in all areas (i.e. urban, metro and rural and remote Tier 5 service areas), or if different licensing areas should be used (e.g. radius-based licence areas in urban areas and custom vector-based licence areas in rural and remote areas). Alternatively, should site-licensing be used in rural and remote areas?

In response to this question, we again propose that simplicity be the watchword for the initial license framework. We propose that a point radius of 25km be used for all licenses initially. This would give ISED the freedom to adjust the license in the future based on an understandable baseline of evidence.

Q4

...maximum permissible power levels and whether higher maximum permissible power levels should be used in rural or remote areas. If so, what maximum permissible power levels should be adopted in rural and remote areas?

Q4a

If higher maximum permissible power levels in rural or remote areas are supported, ...the associated potential technical challenges (e.g. potential for interference between higher power systems and lower power systems operating in close proximity to each other in the same or adjacent frequency range).

In consultation with Shared Access and Local Access licensees in the UK, it seems that 42dBm was sufficient for most purposes. We suggest that ISED reserve the right to allow higher output levels, at their discretion, on request. This would allow for higher output levels in rural areas where there is demonstrated need/demand.

Q5

...whether **larger licence areas**, in the case of radius-based licence areas, should be permitted in **rural and remote areas** and if so, the radius that should be adopted.

Q5a

If a radius-based licence area approach is supported, ...the appropriate radius sizes for licence areas for different frequency ranges (e.g. mid-band or high-band).

With a 25km point radius approach to licensing, operators may apply for additional licenses without the need to maintain different license area sizes. Our comments here are limited to the mid-band spectrum.

Q6

...whether **boundary conditions**, such as implementing power flux density at the licence area boundary or limiting the deployment of base stations to a smaller area within the licence area (i.e. base station deployment areas), should be used. If specified base station deployment areas are used, how should they be determined?

We believe that boundary conditions should be reserved for future possible amendments to the license based on the first years of implementation.

Q7

...potential approaches to **reduce the administrative burden** on applicants and facilitate partial automation of the licensing process.

We believe that approaches to reducing the administrative burden should include:

- Capacity-building initiatives for rural access networks;
- Dedicated capacity-building for Indigenous communities;
- Implementation of licensing toolkits such as have been implemented in the UK⁴ to guide organisations through the license application process.

Q8

...its **proposed licence term**, including:

1. Should ISED adopt a one-year licence term for licences issued through the NCL licensing framework?
2. Should longer licence terms, such as two or three years, be considered in rural and remote areas?
3. Should operators be allowed to acquire licences for less than one year? If yes, what should be the minimum licence term?
4. Should ISED determine appropriate licence terms based on an assessment of each identified band?

Following the OFCOM model Shared Access License model⁵, we propose that the licence term be indefinite. As long as licence fees are paid each year and the licensee doesn't break

⁴ Welcome To The 5G New Thinking Rural Connectivity Toolkit

https://toolkit.5gnewthinking.org/index.php/Welcome_To_The_5G_New_Thinking_Rural_Connectivity_Toolkit

⁵ OFCOM Shared Access Licence. Guidance document

https://www.ofcom.org.uk/_data/assets/pdf_file/0035/157886/shared-access-licence-guidance.pdf

any of the licence terms and conditions, the duration of the license should be indeterminate.

Q9

...the **eligibility requirements** for licences issued through the NCL licensing framework.

We agree that applicants should demonstrate that they meet the eligibility criteria as set out in section 9(1) of the Radiocommunication Regulations. Further we propose that holders of national or regional IMT spectrum licenses be excluded from access to NCL licenses. National or regional IMT spectrum license holders already have significant advantages as compared with small local operators. There is a risk that, in some cases, these operators may apply for NCL licenses simply to exclude local operators from the market.

Q10

...its proposal to set **deployment requirements** for licences issued through the NCL licensing framework.

See answer to Q11

Q11

...its proposal to set a **simple demonstration of deployment** (a “yes/no” system) to meet the condition of licence, and also on how it should be implemented, through one or more of the following:

1. an attestation
2. the provision of evidence that the authorized sites have been deployed
3. other approaches or a combination of approaches

For areas in which demand for Non-Competitive Local Licenses exceed their availability, we propose that evidence that authorised sites have been deployed should be required. However, in instances where demand does not exceed availability, we propose that a simple attestation be sufficient.

Q12

...**when deployment must be active** and cover the licence area:

1. If licences are for one year terms, should some deployment requirements only need to be met in subsequent terms, if the licence is renewed?
2. Should there be a minimum site requirement to ensure that requests for licence areas remain targeted? If so, what would be an appropriate number of sites per unit of area?
3. In rural and remote areas, should deployment requirements be phased (e.g. two or three years after the licence is issued)?

Given the simple 25km point radius license area proposal suggested in Q2, any deployment should be deemed as meeting the license criteria. This can be reviewed in later years should evidence emerge of spectrum squatting.

Q13

...its proposal to not allow the divisibility, transfer or subordination of licences issued through the NCL licensing framework.

We support this. Licenses should simply lapse and be re-applied for rather than transferred, divided, or subordinated. Doing otherwise would create a needless administrative burden for ISED.

Q14

ISED seeks comments on establishing a condition of licence for NCL licences to provide site data information relating to the radiocommunication installations associated with the licence.

N/C

Q15

ISED seeks comments on the other proposed conditions of licence in annex A.

N/C

Q16

...whether a distinction should be made between indoor and outdoor NCL licensing and the type of technical rules and interference mitigation measures that could be required; and if such mitigation measures should only be applicable to certain NCL licensing bands (e.g. higher frequency bands with relatively poor ability to penetrate walls given their propagation characteristics) or only to bands not shared with other radiocommunication services.

N/C

Q17

...the availability of equipment for NCL licences, especially if differentiation is needed on the type of equipment that would allow for the co-existence of indoor (e.g. no weatherized enclosure, no battery power) and outdoor NCL licensing applications in the same spectrum frequency bands in the same area.

N/C

Q18

...general interference mitigation measures that could be implemented to enable band sharing between indoor and outdoor NCL operations, as well as other radiocommunication services, if indoor and outdoor NCL licences are issued to different operators.

N/C

Q19

...its proposal to manage access to the NCL bands and to conduct coexistence analyses through an automated licensing process for NCL operations.

N/C

Q20

...whether there is a need to provide additional feedback (e.g. possible modifications to submitted technical parameters that could enable access to the band) on applications that are rejected due to interference concerns as part of the licensing process.

N/C

Q21

...its proposal not to mandate specific technology solutions (e.g. TDD synchronization between systems) to address interference issues, but to instead set technical rules to facilitate coexistence.

N/C

Q22

...its proposal to implement a fee regime for NCL licences using low and mid-band spectrum. Specifically:

1. the proposed annual fee base rate of \$35.93 per MHz per km² for calculating annual licence fees for spectrum licensed in metro/urban areas and a minimum total licence fee of \$48.00 annually or \$4.00 monthly
2. the proposed 75% reduced annual base rate (\$8.98 per MHz per km²) for calculating annual licence fees for spectrum licensed in rural areas and a minimum total licence fee of \$48.00 annually or \$4.00 monthly
3. the proposed 95% reduced annual base rate (\$1.80 per MHz per km²) for calculating annual licence fees for spectrum licensed in remote areas and a minimum total licence fee of \$48.00 annually or \$4.00 monthly

If a point radius of 25 km is used, that would amount to an area of 1,963 km². Even at \$1.8 per MHz per km², that might amount to nearly \$35,000 for 10MHz of spectrum. This is likely to have a negative impact on the sustainability of rural networks. For rural and remote communities, we propose a modest flat rate to cover ISED administrative costs. In addition, we propose that spectrum fees be waived for Indigenous communities.

Q23

...its proposal to consider applying this fee structure to all NCL spectrum licences below 10 GHz.

N/C

Q24

...its proposal to implement a fee regime for NCL licences using high-band spectrum. Specifically:

1. the proposed annual fee base rate of \$3.59 per MHz per Km² for calculating annual licence fees for spectrum licensed in metro/urban areas and a minimum total licence fee of \$48.00 annually or \$4.00 monthly
2. the proposed 75% reduced annual base rate (\$0.90 per MHz per km²) for calculating annual licence fees for spectrum licensed in rural areas and a minimum total licence fee of \$48.00 annually or \$4.00 monthly
3. the proposed 95% reduced annual base rate (\$0.18 per MHz per km²) for calculating annual licence fees for spectrum licensed in remote areas and a minimum total licence fee of \$48.00 annually or \$4.00 monthly.

N/C

Q25

...its proposal to consider applying the above fee structure to NCL spectrum licences in the 10-95 GHz frequency range.

N/C

Q26

ISED is seeking comment on its proposed service standard of 84 days for licences issued through NCL licensing.

N/C.

Q27

...approaches that would make the NCL licensing accessible for Indigenous service providers, businesses and communities seeking access to spectrum that covers areas they want to service.

Q27a

ISED is also seeking comments on how it should define a licence applicant as Indigenous when developing policies to increase accessibility to spectrum for Indigenous service providers, businesses and communities.

Q28

ISED is seeking comments from Indigenous service providers, businesses and communities, about the challenges (e.g. administrative, regulatory, technical etc.) Indigenous peoples face when accessing spectrum, and suggestions on how ISED can remove these barriers.

Q27 ...approaches that would make the NCL licensing accessible for Indigenous service providers, businesses and communities seeking access to spectrum that covers areas they want to service.

Participants at the 2022 Indigenous Connectivity Summit (ICS) developed a set of Calls to Action to ensure Indigenous communities across Canada and the United States achieve digital equity with their non-Indigenous counterparts. Several of the recommendations address how spectrum is allocated in Canada.

The full list of recommendations related to spectrum will be submitted to the Consultation on Spectrum Outlook 2022 to 2026 (SPB-005-22) by a consortium led by the Indigenous Connectivity Institute later this month. However, they are also pertinent to this consultation as they address one of the most significant barriers for Indigenous entities to access spectrum: cost.

ICS participants do not believe lowering the cost of spectrum, on its own, is a solution to make it more accessible to Indigenous communities. Instead, they call on ISED to acknowledge the rights of Indigenous Peoples to their traditional lands, territories, and resources, including the natural resource called electromagnetic spectrum (“spectrum”). These rights are codified in Treaties and Land Claims with the Crown, have been held up in numerous court decisions, and have been codified in international law in Article 26 of the Universal Declaration on the Rights of Indigenous Peoples.⁶

Recognizing that Indigenous Peoples have a right to own and manage spectrum on their lands, ICS participants put forth the following:

- We therefore call on Innovation, Science and Economic Development (ISED) to immediately stop selling spectrum licenses and renewing permits on Indigenous traditional territories, and to acknowledge Indigenous rights to govern and manage the spectrum on and over their lands.
- Furthermore, ISED should immediately fully release unused spectrum licenses on and over Indigenous traditional territories for the use by and benefit of Indigenous peoples.
- If an Indigenous-mandated organization chooses not to manage spectrum in their traditional territories, we call on ISED to acknowledge the inherent Indigenous rights to spectrum by continuing to manage spectrum on Indigenous traditional lands, to make requested spectrum available to, and to turn over any spectrum proceeds to the respective mandated organization.
- We also ask that ISED conducts an annual meaningful public consultation with Indigenous leaders and mandated organizations to discuss whether Indigenous needs for spectrum are being met by ISED. The Canadian government should work

⁶ Article 26

1. Indigenous peoples have the right to the lands, territories and resources which they have traditionally owned, occupied or otherwise used or acquired.
2. Indigenous peoples have the right to own, use, develop and control the lands, territories and resources that they possess by reason of traditional ownership or other traditional occupation or use, as well as those which they have otherwise acquired.

with the mandated organizations in each traditional territory to find the best path forward.

- We ask that the Canadian government takes this action with full collaboration and engagement with, and accountability to, Indigenous Peoples and the public.

Q27a ISED is also seeking comments on how it should define a licence applicant as Indigenous when developing policies to increase accessibility to spectrum for Indigenous service providers, businesses and communities.

Defining any particular organization as “Indigenous” is a difficult undertaking, and it is not in our purview to provide guidance. We will, however, note that there are resources developed by Indigenous organizations that may inform the development of such a definition. As an example, though developed specifically for the philanthropic community and meant as a learning tool for organizations working with Indigenous Peoples, The Circle on Philanthropy and Aboriginal Peoples in Canada’s I4DM⁷ is a useful tool for the context in which it was designed to be used.

Q28 ISED is seeking comments from Indigenous service providers, businesses and communities, about the challenges (e.g. administrative, regulatory, technical etc.) Indigenous peoples face when accessing spectrum, and suggestions on how ISED can remove these barriers.

We understand one of ISED’s objectives with this auction is to meet the Government of Canada’s commitment to ensure all people living in Canada have access to broadband Internet (50 Mbps download, 10 Mbps upload) by 2030.

Ensuring Indigenous entities have access to spectrum on their lands and territories is not enough to achieve the universal service objective. Previous initiatives to achieve universal access in Canada – that is, providing government funding to incumbent Internet Service Providers to build out infrastructure and provide service to rural and remote areas – have not delivered the desired results for many Indigenous communities. Indigenous communities continue to experience slower speeds, higher costs, and lower quality service compared to the rest of Canada.

That approach to bridging the connectivity gap needs to change. An effective and affordable solution for Indigenous communities that are currently unserved or underserved is the creation of community connectivity providers (CCPs), operators of Internet infrastructure built by and for the community they serve.

⁷ <https://www.the-circle.ca/media--publications.html>

However, in addition to the inaccessibility of spectrum for most Indigenous communities, the lack of qualified Indigenous people to build, operate and maintain networks is also a barrier to community-driven connectivity solutions. Addressing this capacity shortage will require a dedicated multi-faceted workforce development effort targeted at Indigenous youth and other individuals seeking to further their education. This effort should include training opportunities that are safe, accessible, inclusive, and culturally competent.

The 2022 ICS Calls to Action propose that to be effective, technical training opportunities for Indigenous youth and individuals seeking career development should take a more hands-on approach as opposed to ones based entirely on classroom instruction, recognize remote learning and field experience for course credit, and ensure that any certifications are recognized and transferable to other learning institutions and industry associations.

We strongly encourage ISED to work with an Indigenous-led organization engaged in technical capacity building to develop and roll out this workforce development effort.

Q29

Noting that the non-competitive local licensing structure could be applied to multiple bands with differing characteristics in the future:

1. Are the proposed measures to support local access, such as small licence area size, low power levels, fees, and expeditious deployment requirements sufficient to ensure local use and access for a diverse set of users?
2. Should any additional measures (for example spectrum limits or area limits or limitations on the type of users) form the basis of the NCL licensing framework or should these measures be considered on a band-by-band basis through consultation?
3. What other measures could be implemented to limit the risk of foreclosure by larger operators to ensure that licensing remains localized and that unused spectrum remains accessible for a variety of users?
4. Should the general NCL licensing framework include measures that recognize the potential differences between urban and rural use cases or should these measures be considered on a band-by-band basis through consultation?

Given the novel nature of this spectrum license, we encourage ISED to adopt an iterative approach beginning with a simple assignment framework that can be improved with feedback from user experience over a few years.

Q30

ISED is seeking comment on the implementation matters set out above.

N/C

Q31

...any issues that the NCL licensing framework may raise regarding numbering resources (e.g. Mobile Network Codes) and whether the US approach or the non-routable MCC 999 may be sufficient for operating private networks under the NCL licensing framework in Canada.

N/C

Q32

...any other issues related to routing calls or that would be required for proper operation of mobile equipment within a private network or for a private network to communicate with a public network that need to be considered for the implementation of the NCL licensing framework.

N/C

Q33

...the equipment ecosystem for NCL licensing in the 3900 MHz band.

N/C

Q34

ISED is seeking comments regarding its proposal to apply the NCL licensing framework to the 3900 MHz band.

N/C

Q35

...its proposal to apply measures to support access in the 3900 MHz band:

1. Should ISED limit the licence area to an aggregate area limit of 5%-20% in any individual Tier 5 service area, regardless of specific frequency blocks within the 3900 MHz band?
2. Would a spectrum aggregation limit (cap) of 20 MHz to a licensee within any contiguous licence area in any individual Tier 5 service area be appropriate?
3. Should both (a. and b.) of these measures be applied?
4. Should these measures be time limited for three years? Would a longer amount of time be appropriate?
5. Should the aggregate area and/or spectrum limits be different in urban, metro, rural and remote Tier 5 service areas?

N/C

Q36

...the two options regarding early access to the 3900 MHz band for WBS operators:

1. Option 1 (all deployed stations): an early application window that would allow existing WBS licensees to apply for and reserve 3900 MHz NCL licences in areas where they have deployed stations and registered those stations as required by ISED.
2. Option 2 (rural and remote stations only): an early application window that would allow existing WBS licensees that have deployed stations in rural and remote areas, and registered those stations as required by ISED, specifically, to apply for and reserve 3900 MHz NCL licences in those same areas.

N/C

Q37

...its proposal that, if an early application window is applied, it be limited to WBS licensees for those areas where they have deployed stations with information submitted to ISED within the timelines set out in the 3800 MHz Repurposing Decision.

N/C

Q38

...how long of a window ISED should provide to WBS operators to apply and when any such window should be opened, if early access is given.

N/C

Q39

...its proposal that adjacent band coexistence between potential NCL operations in the 3900 MHz band and flexible use operations in the 3800 MHz band be determined through an automated process.

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

N/C

Q40

...its proposal to align in principle with the mitigation measures described in SRSP-520, Technical Requirements for Fixed and/or Mobile Systems, Including Flexible Use Broadband Systems, in the Band 3450-3650 MHz to protect radio altimeters from flexible use operations but adapted to the proposed lower power NCL licensing in the 3900 MHz band, which would be incorporated in an SRSP.

N/C

Q41

...its proposal to apply the NCL licensing framework to any mmWave spectrum that is made available for non-competitive licensing through the Consultation on a Policy and Licensing Framework for Spectrum in the 26, 28 and 38 GHz.

N/C

Q42

...the equipment ecosystem for NCL licensing in the mmWave band.

N/C

Q43

...the type of uses envisioned for the mmWave bands that are proposed for NCL licensing.

N/C

Q44

...its proposal to have a phased implementation of the proposed NCL licensing bands, specifically prioritizing the 3900 MHz band prior to making any mmWave spectrum available.

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

We support the prioritisation of the 3900MHz band for Non-Competitive Local Licensing. 3900MHz is going to be far more relevant for the delivery of affordable access solutions in underserved areas than mmWave frequencies. mmWave frequencies offer the potential of very high capacity Point-to-Point links but at relatively short distances. As a result, they are much more appropriate for urban deployments where population density is high. In contrast, 3900MHz has better propagation characteristics and can be used for both fixed wireless and access networks.

Q45

...its proposal to apply measures to support local licensing in the mmWave bands in all Tier 5 service areas.

1. Should ISED limit the licence area to an aggregate area limit of 5%-20% of the geographic area (i.e. square km) in a given Tier 5 service area, regardless of specific channels or amount of spectrum used within any of the mmWave NCL bands?
2. Would a spectrum aggregation limit (cap) of 200 MHz in a given Tier 5 service area be an appropriate level?
3. Should both (a. and b.) of these measures be applied?
4. Should these measures be time limited for three years? Would a longer amount of time be appropriate?
5. Should the aggregate area limit and spectrum limit be different in urban, metro, rural and remote Tier 5 service areas?

N/C

Q46

...its proposal to protect existing earth stations that have deployed prior to the bands being available for NCL licensing at their current operating parameters. However, should these existing earth stations require modifications, they would require re-authorization that would take into account any potentially impacted existing NCL licensed stations at the time.

N/C

Q47

...the concept of an approach in the 26.5-26.7 GHz, 28.3-28.35 GHz and 37.6-38.4 GHz bands between proposed new NCL operations and earth station operations such that once an earth station is authorized, the licensing software would authorize future NCL stations in such a way that the earth station would be protected and that the NCL licensed station would be protected, based on specific technical limits to be established.

N/C

Q48

...any technical rules or sharing mechanisms (e.g. distance, power flux density, I/N ratio) that may be necessary to enable coexistence between NCL licensees and earth station operations in relevant bands, including those in the same band and in adjacent bands.

N/C

Q49

In addition, ...any technical rules or sharing mechanisms that may be necessary to enable coexistence between NCLs and other users in relevant bands.

N/C