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22 October 2021

Ms. Chantal Davis
Innovation, Science, and Economic Development Canada
Senior Director, Regulatory Policy, Spectrum Licensing Policy Branch
235 Queen Street (6th Floor, East Tower)
Ottawa ON K1A 0H5

Via Email: spectrumauctions-encheresduspectre@ised-isde.gc.ca

Dear Ms. Davis,

On behalf of the Association of Equipment Manufacturers (AEM), I am writing in response to the "Consultation on New Access Licensing Framework, Changes to Subordinate Licensing and White Space to Support Rural and Remote Deployment."

AEM is the North American-based international trade group representing off-road equipment manufacturers and suppliers, with more than 1,000 companies and more than 200 product lines across the agriculture, construction, forestry, mining, and utility-related industry sectors worldwide. Collectively, the Canadian equipment manufacturing industry supports 149,000 jobs and contributes roughly $45 billion per year to the Canadian economy.

Outcomes-based priority for rural connectivity

AEM is aligned with ISED's goal to support innovation and the availability of rural services through the proposed introduction of a new supplementary licensing process (Access Licensing framework) for unused spectrum. However, this submission will not address the technical questions posed by ISED, but rather speak to the outcomes that can be achieved through improved and more widespread rural and remote connectivity.

To achieve these outcomes in a timely manner, the spectrum business model should prioritize providers who are committed as soon as possible to deliver reliable internet services in rural and remote locations Canada, where the end-use occurs for much of the equipment that AEM members manufacture.

Connectivity key to unlocking environmental and economic benefits

Earlier this year, AEM, along with support of the Canadian Canola Growers Association, Canadian Seed Trade Association, Farm Credit Canada, and Grain Farmers of Ontario released a study quantifying how widely-available precision agriculture technology used in agriculture improves environmental stewardship while providing economic return for farmers.

Precision agriculture uses technologies to enhance sustainability through the more efficient use of critical inputs, such as land, water, fuel, fertilizer, and pesticides. Essentially, farmers who use precision agriculture tools use less to grow more. The study was completed to highlight how policies and other technology-enabling priorities can help farmers increase these outcomes.

For the interest of this spectrum consultation, the key to further unlocking the benefits of this precision agriculture technology is improved access to connectivity in rural and remote communities across Canada.

Comprehensive study of the environmental benefits of precision agriculture

AEM, through The Context Network—a leading agricultural research firm—conducted a comprehensive study of the environmental benefits of precision agriculture as they relate to five technologies: auto guidance/steer, section control, variable rate, machine and fleet analytics, and precision irrigation. All of these tools are widely available today from a variety of competing brands. It is important to state that the production increases and input reductions listed below are directly attributable to these five equipment innovations alone. The results do not take into account benefits achieved through other modern agricultural advances, such as seed traits or the latest chemistries. We found that substantial sustainability gains can be reached by increased adoption of these five technologies, some of which have been on the market for over 20 years.

However, a key factor to expanded farmer adoption of these technological innovations is wireless broadband connectivity over croplands. Modern agriculture is increasingly a data-driven business and the ability to seamlessly move information from sensor to machine to application is a deciding factor for success. Through increasing rural and remote connectivity, ISED can play a pivotal role in providing the information infrastructure that Canada's farmers need to compete in the global market place while feeding a growing world through sustainable practices.

Auto-Guidance/Steer

Auto-steer uses GPS signals to automatically control equipment while seeding, spraying, applying fertilizer and harvesting. This reduces row overlap of farming operations, leading to substantial fuel and input savings.

Current Adoption Rate by Crop:

- Corn – 60-percent
- Soybean – 60-percent
- Canola – 60-percent
- Pulses – 60-percent
- Wheat – 60-percent
- Potatoes – 54-percent
- Other cereals – 54-percent
- Hay and Forage – 13-percent

Machine Section Control

Machine section control technology turns planter, fertilizer or sprayer sections on or off in rows that have been previously seeded/sprayed, during headland turns, point rows or near waterways. This technology also allows tillage tools to adjust drag and depth.

Current Adoption Rate by Crop:

- Corn – 45-percent fertilizer / 22-percent herbicide application
- Soybean – 45-percent fertilizer / 22-percent herbicide application
- Canola – 45-percent fertilizer / 22-percent herbicide application
- Pulses – 45-percent fertilizer / 22-percent herbicide application
- Wheat – 45-percent fertilizer / 22-percent herbicide application
- Potatoes – 45-percent fertilizer / 22-percent herbicide application
- Other cereals – 45-percent fertilizer / 22-percent herbicide application
- Hay and Forage – 10-percent fertilizer / 5-percent herbicide application

Variable Rate

Variable rate technology uses sensors and/or preprogrammed maps to vary the amount of seed, fertilizer and crop protection products that are applied, based on varying conditions within a field.

Current Adoption Rate by Crop:

- Corn – 32-percent fertilizer / 13-percent herbicide application
- Soybean – 32-percent fertilizer / 13-percent herbicide application
- Canola – 32-percent fertilizer / 13-percent herbicide application
- Pulses – 32-percent fertilizer / 13-percent herbicide application
- Wheat – 54-percent fertilizer / 13-percent herbicide application
- Potatoes – 54-percent fertilizer / 13-percent herbicide application
- Other cereals – 54-percent fertilizer / 13-percent herbicide application
- Hay and Forage – 15-percent fertilizer / 2-percent herbicide application

Machine and Fleet Analytics

Real-time monitoring of equipment provides information such as GPS location, equipment idling time, traffic control and route suggestions, and the flagging of potential maintenance issues, helping producers utilize their equipment more efficiently.

Current Adoption Rate by Crop:

- Corn – 12-percent
- Soybean – 12-percent
- Canola – 12-percent
- Pulses – 12-percent
- Wheat – 12-percent
- Potatoes – 12-percent
- Other cereals – 12-percent
- Hay and Forage – 12-percent

Precision Center Pivot Irrigation

Sensor technology enables center-pivot systems to switch on/off and apply different amounts of water to different areas of the field.

Current Adoption Rate by Crop:

- Corn – 22-percent
- Soybean – 22-percent
- Canola – 22-percent
- Pulses – 9-percent

- Wheat – 9-percent
- Potatoes – 17-percent
- Other cereals – 9-percent
- Hay and Forage – 17-percent

Accordingly, the Context Network study further showed that current adoption rates of the above five technologies (auto guidance, section control, variable rate, analytics, and precision irrigation) have achieved:

- 4-percent increase in crop production,
- 7-percent reduction in water use,
- 6-percent reduction in fossil fuel use,
- 6-percent improvement in the placement of fertilizer, and
- 9-percent efficiency increase in herbicide application.

To put these environmental benefits in perspective:

- Canada would have to farm an additional 1.44 million hectares of land to reach the same harvest levels if not for production increases due to precision agriculture tools.
  - Equivalent area to 2.2 Banff National Parks.
- Use of 4.5 million kilograms pesticides are avoided each year.
- 117,347,765 litres of fossil fuels were not burned.
  - Equivalent to removing 60,000 cars off the road per year.

If Canadian agriculture reached "full adoption" of these five precision agriculture technologies, which we define as 95-percent, we would see additional environmental benefits of:

- 7-percent production increase,
- 18-percent less water use,
- 11-percent less fossil fuel burned,
- 16-percent improved fertilizer placement, and,
- 16-percent more efficient use of herbicides.

It is also worth noting there is a wide range of solutions available today in terms of cost and performance. Even once a farmer has adopted an entry-level version, there are significant gains that can be achieved as they upgrade to systems with higher levels of

performance. For example, in GPS auto-guidance, going from 3" of accuracy to less than 1" can have a significant reduction in overlap over several thousand acres.

Additionally, soil compaction caused by wheel traffic can reduce yields due to restriction of root growth and nutrient and water availability. However, auto-guidance/steer systems make Controlled Traffic Farming (CTF) possible. CTF improves efficiencies by creating permanent traffic lanes in fields, leaving 80-90% untouched by compaction.

Conclusion

Maximizing the potential of rural and remove connectivity will allow the full utilization of the above tools. Canadian agriculture is experiencing a technological revolution. AEM is excited about the tremendous benefits farmers, ranchers, and the environment can realize with increased adoption of these proven and widely available equipment technologies.

AEM looks forward to working with ISED to explore ways to provide producers with the enabling infrastructure necessary to take their operations to the next level.

For further information please contact Nick Tindall, AEM's Senior Director of Regulatory Affairs, at ntindall@aem.org or 202-701-4287.

Thank you for the opportunity to engage with you on this issue.

Sincerely,

T. Howard Mains
Canada Public Policy Advisor

October 26, 2021

INNOVATION, SCIENCE, AND ECONOMIC DEVELOPMENT CANADA

 Response to:

Canada Gazette, Part I, Volume 155, Number 33: Notice No. SLPB-004-21

CONSULTATION ON NEW ACCESS LICENSING FRAMEWORK, CHANGES TO SUBORDINATE LICENSING AND WHITE SPACE TO SUPPORT RURAL AND REMOTE DEPLOYMENT, AUGUST 2021

Please find attached the response of the BC Broadband Association to the above consultation.

Bob Allen

Bob Allen

President
BC Broadband Association

Introduction

The BC Broadband Assocation (BCBA) represents a range of telecommunications service providers based in Western Canada. Our members who serve low density rural areas of this part of Canada were severely impacted by the phase out of the 3650 – 3700 MHz band as part of the consultation for the 3500 MHz auction. The loss of access to this spectrum and the equipment ecosystem that had evolved to support it has effectively stopped rural WISPs in Canada from deploying LTE systems that can provide 50 / 10 service levels. Our members are not sure that this complex proposal will in fact replace the loss of that spectrum.

Overview

1. The BCBA supports the submission of the Canadian Association of Wireless Internet Service Providers (CanWISP) for this consultation.

2. In addition to supporting CanWISP we wish to engage in the consultation and will be responding to the comments of the other participants.

3. Although we are not responding to all the questions posed in this submission we have identified the key questions and will provide a response to those specific questions.

Response to Questions

Q1
ISED is seeking comments on its proposal to implement a new Access Licensing framework to make licences available in rural and remote areas where there is unused spectrum.

The BCBA supports the proposal to make commercial spectrum available to small rural providers to assist them in deploying FWA systems to support the development of commercially viable business models. The small wireless providers in the Canadian marketplace have been denied access to viable spectrum by ISED's recent

decision to remove access to the 3650 – 3700 band despite there being no commercial alternative to this band. This decision effectively prevented telecom service providers other than spectrum licence holders from investing in systems capable of delivering the 50 /10 services that are the goal of the Canadian Government for rural subscribers. This lack of investment in these systems will mean that fewer rural Canadians will be able to cross this digital divide.

The lack of useful spectrum to deploy rural FWA services have stranded the investments made by regional WISPs and those collapsed business models now hobble the path forward for rural connectivity. It will be imperative that ISED provide a viable business model with a positive, timely and straightforward ruling here that sends a clear message to investors in Canadian rural broadband systems that there will be a long-term licence available in areas with sufficient population to support telecom investment. Having disillusioned the current players in this space with the removal of access to the 3650 – 3700 band it will take a very attractive opportunity to re awaken interest in commercially viable systems based on the outcome if this consultation.

Q2

ISED is seeking comments on its proposal to issue access spectrum licences and access radio licences on a first-come, first-served basis.

The BCBA supports first come first served licencing for sublicensing in rural markets.
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Q3, 4 and 5

ISED is seeking comments on its proposal to use the rural and remote Tier 5 service areas as the basis to determine the rural and remote areas in which it will apply access licensing.

The BCBA supports the use of Tier 5 service areas for licences. Most of the undeployed spectrum is from licence holders who may have won the spectrum in auctions that were intended to be provide spectrum for mobile services. Many of these bands did not attract commercial FWA systems but rather produced a large market for mobile phones. As the consultation proceeds ISED should take a hard look at what bands do have commercial FWA systems and User Eqipment (UE) available.

The most likely candidate for these systems would be the spectrum that was won in the 2004 spectrum auction for the 3500 MHz band. Although the licences are in the process of being renewed with flexible use provisions the fact remains that there are commercial systems for this band and that the licence holders have in many cases held the spectrum for 20 years without using them for rural deployments.

The principles that are presented by ISED in the consultation document sound reasonable and indicate a desire to recognize that commercially successful deployments are the key indicator of the success of the program.

The BCBA also agrees with CanWISP that the services and spectrum allocations areas that become available should be reserved for one year before being offered to national carriers.

Q6

ISED is seeking comments on adopting a flexible use licensing model for fixed and mobile services when issuing access spectrum licences.

The BCBA believes that allowing the licences to be used for fixed or mobile service is reasonable. While the main commercial use in rural Canada will be for fixed wireless access the ability to offer mobile products may become a possibility in the future. The spectrum cannot be used commercially by multiple operators so it is not harmful to Canada to include the use of mobile services in the licence.

Given the recent CRTC regulations for access to the mobile networks of the established national carriers the licences are of limited use for mobile services as small companies have been excluded from the MVNO program entirely

Q7

ISED is seeking comments on its proposal to use Tier 5 service areas for the proposed access spectrum licences and any associated potential technical challenges should this process be applied to all commercial mobile or flexible use frequency bands.

The BCBA supports CanWISP response to this question.

Q8

ISED is seeking comments on any future adjustments to the licence areas for access spectrum licences, including consideration of more localized areas (e.g. smaller than Tier 5).

The BCBA supports CanWISP response to this question.

Q9

ISED is seeking comments on its proposed process for identifying rural and remote Tier 5 service areas in which there is unused spectrum that would be made available for access spectrum licensing.

The BCBA believes that the current holders of these licences will not view ISED's proposal favourably. Should this access to spectrum result in a viable program that produces competition to them they will be even more unlikely to co-operate with the program. The program will need to have a clear set of rules for application and set timelines to issue the licence.

Q10

ISED is seeking comments on its proposal to impose a condition of licence to prohibit existing primary and subordinate licensees' deployment in areas for which an access spectrum licence has been issued.

Q11

ISED is seeking comments on its proposal that stations already deployed by primary or subordinate spectrum licensees within their service areas would be protected from subsequent deployment under access spectrum licences.

The BCBA supports CanWISP response to this question.

Q12 to Q48

The BCBA supports CanWISP response to these questions.

Q49

ISED is seeking comments on its proposal to no longer renew existing RRBS licences after March 31, 2027.

The BCBA believes that ISED should allow existing RBBS systems that are serving rural Canadians to operate until they reach the end of the equipment lifecycle. The Canadian entrepreneurs who developed viable systems for this band should not be faced with the economic costs of being forced to turn down systems that are using unused spectrum in rural areas to provide services. Forcing the removal of these systems as opposed to letting them operate to their maximum financial return sends a poor message to future Canadian entrepreneurs who face difficult challenges developing products in the face of global competion.

Conclusion

The BCBA is hopeful that ISED will realize the significant challenge to small rural operators that this proposed mechanism will result in. This process and the subsequent process to award licences will require large resources from ISED.

The end result will not achieve anything similar to what could have been achieved had ISED not removed the 3650 – 3700 MHz band from use for rural broadband service.

While it is commendable to see the noble cause of putting unused spectrum to work for Canadians the fact remains that the spectrum would have been used if it could support a reasonable return from being deployed by its original licence holders.

In the face of this complex experiment with uncertain results it should be noted that the 3650 – 3700 MHz band was widely used and enjoyed a licence process that was easy to apply for and manage. This spectrum will now sit unused for at least 5 to 10 years from today and possibly will never be used in rural areas.

The BCBA believes that ISED erred in reserving the 3650 – 3700 MHz band for future auction purposes. We ask that ISED reconsider this decision and add 30 MHz to the band immediately to further the deployment of 50 /10 service to rural Canadians

October 13, 2021

Senior Director, Regulatory Policy, Spectrum Licensing Policy Branch
Innovation, Science and Economic Development Canada (ISED)
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Via e-mail: spectrumauctions-encheresduspectre@ised-isde.gc.ca

Re: Consultation on New Access Licensing Framework, Changes to Subordinate Licensing and White Space to Support Rural and Remote Deployment

Canadian Canola Growers Association (CCGA) appreciates the opportunity to comment on ISED's Consultation on New Access Licensing Framework, Changes to Subordinate Licensing and White Space to Support Rural and Remote Deployment. CCGA represents 43,000 canola farmers from Ontario to British Columbia on national and international issues, policies, and programs that impact farm profitability.

The canola sector is an innovative and strong contributor to Canada's economy, generating $26.7 billion annually and supports 207,000 jobs across the country. Canadian canola is an export driven commodity and is shipped to over 50 markets around the world, with exports valued at $11.9 billion in 2020. The canola industry has set an ambitious target to increase canola production to 26 million metric tonnes by 2025, and meet sustainability targets to improve energy and land efficiency, sequester more carbon, improve soil and water health, and protect biodiversity.

Lack of rural connectivity is a severe problem that requires immediate solutions

Rural connectivity is critical for the safety and long-term success of farmers and their operations. Lack of reliable access creates various barriers in the farm economy such as the inability to access new technology, challenges accessing programs to manage risk on their farm or labour, and most importantly, increases health and safety risks on farms. In a recent survey by the Keystone Agricultural Producers of Manitoba (KAP), many respondents expressed concerns about the ability to access emergency services when needed, obtaining weather and road condition reports, or the reliability of their alarm systems and security cameras on their property.[1] Weak wireless connection in rural areas also mean that farms are not able to fully participate in the digital economy (either accessing services or marketing their products online) as Canadians in more connected regions of the country.

Unreliable internet also results in inefficiencies and creates barriers to the adoption of new technologies on farm that are critical to achieving the production and environmental sustainability goals of the sector. Simple tasks such as loading internet pages or downloading software for farm equipment can take hours and the time required

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[1] Survey Report. Rural Cell and Internet Service in Manitoba. The Keystone Agricultural Producers of Manitoba. April 2020. https://486d1ae5-bba6-4d54-8d48-301060955887.filesusr.com/ugd/e7b649_beba6db9c88c451abe3b947cdbd1d992.pdf

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to access these services essentially means they are inaccessible, particularly in busy periods of the crop year when time is of the essence. More broadly, connectivity issues slow the adoption of technology on farms and the pace of innovation within the sector, threatening Canada's competitiveness as a world leader in agricultural exports and sustainable practices. For example, precision agriculture technologies provide the ability to farm smarter and use less crop inputs but require access to large quantities of data and analysis to fully incorporate into farming activities. Education for rural communities is also a concern. With education moving more virtual the lack of rural broadband could cause students in those regions to lag behind those in more urban regions.

Despite its importance, rural Canada still faces inferior wireless service compared to their urban neighbours. According to the Canadian Radio-Television and Telecommunications Commission (CRTC), only 45.6% of households in rural communities have access to broadband coverage of 50/10 Mbps, the federal government's benchmark for universal internet, compared to 87.4% for Canada as a whole, and mobile coverage is still not equivalent.[2] In partnership with the Canadian Internet Registration Authority, the Agricultural Producers Association of Saskatchewan commissioned an internet speed test for Saskatchewan, and found that "over half of test takers are experiencing download speeds of less than 10 Mbps, which is only a fraction of the 50 Mbps considered to be a sufficient internet speed for Canadians."[3] These numbers underscore the critical work that remains and the importance of government keeping rural broadband deployment a priority and working with industry to expedite access.

An outcomes-based approach is required

CCGA applauds the intention of this consultation to "support innovation and the availability of rural services." Farmers are not in the business of obtaining spectrum licences, however, as noted earlier, they are directly affected by how spectrum gets deployed. Therefore, policy and regulatory considerations concerning how rural broadband gets deployed should at its basis seek to solve issues of the end-use customer: that be promoting equitable, affordable, reliable access to modern wireless speeds for all Canadians regardless of where they live. It is with this approach in mind that CCGA will offer the following comments, that can be utilized regardless of what additions or changes will be made to licence type.

CCGA is of the view that a primary method to achieve those objectives is through more stringent deployment requirements and competition. Deployment requirements, regardless of licence type, should include criteria to deploy spectrum to Tier 5 rural and remote service areas. To avoid more densely populated areas solely benefiting from the new spectrum, it is recommended ISED change deployment requirements from a population percentage alone, to also including serving a specific geographic area in the identified region that is not densely populated. Having this specific deployment criteria can also promote competition and encourage subordinate licensing, by incentivizing larger carriers to work with smaller carriers that have the business case and expertise to deploy in rural areas. All license criteria should also include deployment requirements within and at the end of

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[2] Broadband Fund: Closing the digital divide in Canada. Canadian Radio-Television and Telecommunications Commission. Accessed October 8, 2021: https://crtc.gc.ca/eng/internet/internet.htm

[3] Final Report. Rural Connectivity Task Force. Agricultural Producers Association of Saskatchewan. March 2021. Page 5. https://apas.ca/pub/documents/Advocacy%20and%20Resources/Rural%20Connectivity/rctf-final-report-final-web.pdf

the term that would ensure continued rollout and timely use of the spectrum obtained. To spur access, CCGA supports the concept of such deployment requirements being an eligibility requirement for renewal of licences.

To further encourage competition, CCGA welcomes spectrum auctions at the Tier 5 level. This would allow more carriers the opportunity to participate in spectrum auctions as the service areas are smaller and deployment costs would be more competitive. Additionally, government funding that assists with deployment should be better coordinated with spectrum auctions and help ensure there's sustainable financial support to service those regions that do not demonstrate an economically profitable business case for deployment, and reduce thresholds to allow smaller providers and smaller projects to access funding. This can also promote competition within the sector.

Conclusion

A lack of wireless coverage in rural Canada poses various challenges for canola farmers that impact the safety and prosperity of their farms. As the world becomes more reliant on online services, particularly during this pandemic, the need for reliable, affordable internet and mobile coverage are more important than ever. For the reasons discussed, CCGA stresses the importance of ensuring proper and timely deployment of spectrum to rural Canada to empower Canadian farmers and their operations for years to come. Canola farmers, and the agriculture industry more broadly, are strong contributors to Canada's economy and can contribute further and help meet Canada's sustainability goals if proper wireless access is obtained. The Industry Strategy Council has identified Canada's agri-food production as an important pilar to be leveraged to grow Canada's GDP through the use of modern agriculture technologies, such as precision agriculture. An outcomes-based approach that focuses on stringent deployment terms for rural Canada and supports competition will help solve these connectivity challenges and help seize opportunities in Canadian agriculture.

Sincerely,

Dave Carey
Vice-President, Government and Industry Relations
Canadian Canola Growers Association

CC: Gayle McLaughlin, Manager, Government and Industry Relations, Canadian Canola Growers
        Association

October 12, 2021

Innovation, Science and Economic Development Canada
Senior Director, Regulatory Policy, Spectrum Licensing Policy Branch
235 Queen Street (6th Floor, East Tower)
Ottawa ON K1A 0H5

Re: Canada Gazette, Part I, August 2021, Consultation on New Access Licensing Framework,
Changes to Subordinate Licensing and White Space to Support Rural
and Remote Deployment (SLPB-004-21)

Dear Senior Director:

Thank you for initiating a consultation on a *"New Access Licensing Framework, Changes to Subordinate Licensing and White Space to Support Rural and Remote Deployment."* We are pleased to provide input for your consideration from a directly rural perspective.

The Canadian Cattlemen's Association (CCA) and the National Cattle Feeders' Association (NCFA) serve as national voices for Canada's 60,000 beef ranches, farms, and feedlots. CCA and NCFA work to address issues of direct concern to Canada's beef producers, including rural connectivity.

The lack of rural broadband connectivity is an important and growing concern right across the agricultural sector as business, trade, and communication increasingly take place through digital means via the Internet.

While COVID-19 served to highlight the lack of rural broad-band connectivity during pandemic lock-downs and limited in-person contact, it is important to also understand how the beef industry is looking to bridge distance and build efficiencies throughout the supply chain by implementing new Internet-dependent technologies such as the trading of cattle through digital online auctions, the use of electronic shipping manifests, and a new system of e-certification for animal health export certificates via the CFIA's new Electronic Service Delivery Platform (ESDP).

The economic benefits and potential of these technologies are considerable but are currently hampered by a lack of rural connectivity.

In recent years, the Government of Canada has emphasized the need for rural broadband. Both CCA and NCFA support the Government continuing to move forward with rural broadband connectivity and believe that government policies must align with a faster rural connectivity rollout. The longer we wait to get our farms, ranches, and feedlots connected, the further we set back our industry from taking full advantage of digital and cloud-based on-farm innovations.

Of equal importance to implementing rural broadband is the issue of affordability. Ensuring that rural Canadians can afford broad-band access that matches the service available to urban Canadians is essential.

Rural Canadians are at a disadvantage when it comes to connectivity, both on broadband and cell service. There are many regions within rural Canada that do not have any cell coverage; this is not only an efficiency issue but a large safety concern. As the Government of Canada continues to find new ways to bring connectivity across all of Canada, both broadband internet and cell service coverage should be considered.

Canada's ranchers and farmers need wireless Internet access, and as new innovations and the pandemic have clearly shown, it is a necessity. With better connectivity, those who work in agriculture will be better equipped to engage in virtual conversations without disruption, digitally monitor animal health in real time, and continue to adopt innovations without the limitations presented by current connectivity challenges.

As we move ahead in the digital revolution, lets ensure our farmers and ranchers can lead the charge from rural Canada.

Sincerely,

_____   _____
Bob Lowe   James Bekkering
President   Chair
Canadian Cattlemen's Association   National Cattle Feeders' Association

October 12, 2021

VIA Email: spectrumauctions-encheresduspectre@ised-isde.gc.ca

Innovation, Science and Economic Development Canada
c/o Senior Director, Regulatory Policy, Spectrum Licensing Policy Branch
235 Queen Street, 6th Floor, East Tower
Ottawa, Ontario
K1A 0H5

Subject: ***Canada Gazette, Part I, Volume 155, Number 33, SLPB-004-21 –
Consultation on New Access Licensing Framework, Changes to Subordinate
Licensing and White Space to Support Rural and Remote Deployment***

1. Pursuant to the procedures established in *Consultation on New Access Licensing
Framework, Changes to Subordinate Licensing and White Space to Support Rural and
Remote Deployment*, (the "Notice of Consultation") the Canadian Communication
Systems Alliance, Inc. ("CCSA") hereby submits its comments.

2. CCSA speaks for independent communications distributors – smaller broadcasting
distribution companies, telephone companies and ISPs – across Canada. CCSA
represents more than 100 companies operating from sea to sea to sea, including
across the North.

3. The Notice of Consultation sets out the following policy objectives at paragraph 12:

    • facilitate the deployment and timely availability of services across the
       country, with an emphasis on rural and remote regions

    • foster investment and the evolution of wireless networks by enabling the
       development of innovative and emerging applications

    • support sustained competition in the provision of wireless services so that
       consumers and businesses benefit from greater choice and competitive prices.

4. CCSA strongly supports those objectives and, more generally, the objective of
ensuring that spectrum is put to use to the greatest extent possible by promoting
greater access to spectrum in rural and remote areas.

5. CCSA also agrees with the premises, at paragraph 15, that there are "significant gaps in mobile connectivity" and, at paragraph 17 that "a mix of connectivity solutions will be required including fibre, satellite and terrestrial wireless technologies".

6. CCSA's members include both telecommunications distributors who operate cable-based terrestrial networks and a number of SILECs who offer both terrestrial network services and mobile services using previously licensed spectrum.

7. The independent distributors who operate terrestrial networks and who, as yet, are unable to offer mobile services, are extremely interested in economically extending the reach of their networks and improving the quality of their services through improved access to licensed spectrum.

8. The SILEC distributors have the same interest and, in addition, seek improved access to spectrum for mobile use to improve the reach and quality of their mobile networks.

9. As a general proposition then, CCSA strongly supports the Department's proposals for:

    - implementation of an "Access Licensing Framework";
    - improved access to unused, licensed spectrum through streamlined and simplified subordination rules; and
    - access to TV "white space" spectrum for broadband applications.

10. CCSA's responses to the individual questions posed by the Notice of Consultation are set out in the attachment that follows.

11. CCSA welcomes this important initiative and thanks the Department for the opportunity to make these comments.

Sincerely,

Christopher J. Edwards
Vice-President, Regulatory Affairs

Responses to Individual Questions Posed by Notice of Consultation SLPB-004-21

Q1   *ISED is seeking comments on its proposal to implement a new Access Licensing framework to make licences available in rural and remote areas where there is unused spectrum.*

A1   CCSA strongly supports the proposal to establish a new Access Licensing framework. In CCSA's view, any initiative that supports improved access to spectrum for independent telecommunications providers is to be encouraged, especially to the extent that it supports deployment and extension of networks to serve rural and remote areas.

Q2   *ISED is seeking comments on its proposal to issue access spectrum licences and access radio licences on a first-come, first-served basis.*

A2   CCSA supports the award of access licences on a "first-come, first-served" basis. CCSA considers that approach to be consistent with the objective of getting currently licensed but unused spectrum deployed as quickly as possible. That approach is particularly appropriate in view of the Department's expectation, noted at paragraph 31 of the Notice of Consultation, that demand is unlikely to exceed supply.

Q3   *ISED is seeking comments on its proposal to use the rural and remote Tier 5 service areas as the basis to determine the rural and remote areas in which it will apply access licensing.*

A3   CCSA supports the use of Tier 5 licensing areas as the basis for determining the rural and remote areas to which access licensing would apply. However, we consider that approach to be a starting point.

CCSA notes the Department's statement, at paragraph 43 of the Notice of Consultation, that: "Should licensing on an even more localized level be feasible in the future, ISED may consider issuing access licences on a smaller level".

While a key objective of the proposed framework is to increase connectivity in rural and remote areas, we note that there remain numerous rural communities which are near to urban centres and which still face connectivity challenges similar to those present in more remote areas.

Examples have been noted by CCSA members whereby Urban Tiers extend into rural territory and in some cases split two Rural T5 areas. Deployments of unused spectrum in these areas could benefit rural customers. A Tier 5-only approach would alienate the underserved rural customers stuck in the area defined as "urban" between the adjacent rural Tier 5 areas and constrain the nearby Tier 5 deployments due to interference considerations in a small section of the urban area.

CCSA suggests that, once the initial Tier 5 approach has been implemented, the Department should consider more localized licensing, on a hexagon basis, to address situations such as the one just described.

Q4   *ISED is seeking comments on its proposed principles to be used when considering spectrum licensed or radio licensed bands where the proposed Access Licensing framework will apply.*

A4   CCSA supports the proposed licensing principles and has no further specific comment to offer at this time.

Q5   *ISED is seeking comments on other principles it should take into account when considering bands where the proposed Access Licensing framework will apply.*

A5   CCSA has no specific comment to offer at this time.

Q6   *ISED is seeking comments on adopting a flexible use licensing model for fixed and mobile services when issuing access spectrum licences.*

A6   As a general proposition, CCSA supports the use of a flexible licensing model as a means of encouraging extension of connectivity to Canadians by the means most appropriate to a given service area and the capabilities of that areas' service providers.

Having said that, we do have some concern that a flexible model could potentially contribute to spectrum congestion in some areas and might also represent an opportunity for the incumbents to occupy spectrum which might more effectively be applied to the extension and improvement of fixed networks in some areas.

For most CCSA members, the increased opportunity to use spectrum to extend and improve fixed terrestrial network would be the primary benefit of an access licensing framework.

Q7   *ISED is seeking comments on its proposal to use Tier 5 service areas for the proposed access spectrum licences and any associated potential technical challenges should this process be applied to all commercial mobile or flexible use frequency bands.*

A7   CCSA has no specific comment to offer at this time.

Q8   *ISED is seeking comments on any future adjustments to the licence areas for access spectrum licences, including consideration of more localized areas (e.g. smaller than Tier 5).*

A8   As CCSA noted in its response to Q3, at some point in time, access licenses localized to individual hexagons could potentially fill in underserved gaps in Urban Tiers. In addition, consideration of the propagation characteristics of specific bands and the individual deployment scenario should be given when determining the size of the license area to be applied.

Q9   *ISED is seeking comments on its proposed process for identifying rural and remote Tier 5 service areas in which there is unused spectrum that would be made available for access spectrum licensing.*

A9   CCSA supports the process as described, subject, again, to its comments regarding licensing, in future, on the basis of even more localized areas such as hexagons.

Q10   *ISED is seeking comments on its proposal to impose a condition of licence to prohibit existing primary and subordinate licensees' deployment in areas for which an access spectrum licence has been issued.*

A10   CCSA supports the proposal to impose such a Condition of Licence and has no further specific comment to offer at this time.

Q11   *ISED is seeking comments on its proposal that stations already deployed by primary or subordinate spectrum licensees within their service areas would be protected from subsequent deployment under access spectrum licences.*

A11   CCSA supports this proposal. However, this protection should extend only to the primary licensee's existing network configuration at the time the access licence is issued. As noted in our response to Q24, subsequent upgrades or changes to the primary licensee's network should be required to coordinate with the access licensee's operations.

Q12   *ISED is seeking comments on the above options for eligibility.*

A12   CCSA has some concern with both options for eligibility as presented. Option 1 would foreclose an applicant from obtaining an access licence if it has any underdeployed spectrum in the applicable Tier 5 licence area. Option 2 would foreclose an applicant from obtaining an access licence if it has any deployed or undeployed spectrum in the applicable Tier 5 licence area.

Both options fail to recognize that some applicants may have been unable to build a viable network because the amount of spectrum – deployed or undeployed – which they currently hold may not be sufficient to build a viable network.

An operator in this position could potentially build a viable network by combining its existing spectrum holdings with adjacent spectrum obtained using an access license. Such an approach should not be restricted as it has the potential to transform stale spectrum into a viable 50/10 fixed wireless deployment or perhaps improve mobile network performance in rural areas.

While Option 2 might benefit smaller independent telecommunications providers who currently hold no licensed spectrum by restricting eligibility for access licences, operaters should not be prevented from marshalling all of the spectrum resources available to them to provide the best possible network solutions.

CCSA submits that this may be an area in which case-by-case assessment of the applicant's planned use of the spectrum to be obtained under an access licence would be merited.

Q13   *ISED is seeking comments for Option 1 and Option 2, specifically should the deployed and/or undeployed spectrum be based on any frequency band (e.g. 2500 MHz) currently held by the applicant or only the band (e.g. PCS band) for which the application is made?*

A13   Given that the objective is not to limit eligibility for access licences but, rather, to encourage deployment of spectrum, CCSA suggests that the operation of eligibility requirements should be constrained to the same band for which an access licence application is made.

Q14   *ISED is seeking comments on its proposal to issue access spectrum licences with a three-year licence term and the proposed wording of the condition of licence above.*

A14   While the existence of a "high expectation of licence renewal" is comforting, it is not a completely reliable basis for capital network investment. That is especially true for the smaller telecommunications providers who, potentially, stand to gain most from an Access Licensing framework. Those smaller providers face challenging cases for timely return on their capital network investments and, for them, three years is a very short time for financing and construction of a network.

CCSA submits that a five-year licence term, again with a high expectation of renewal, would be more appropriate to an Access Licensing framework.

Q15   *ISED is seeking comments on its proposal that access spectrum licences not contain transfer, subdivision or subordination privileges.*

A15   CCSA supports the proposed restrictions on the transfer, subdivision or subordination of access licences and has no further specific comment to offer at this time.

Q16   *ISED is seeking comments on its proposal to align the deployment conditions for access spectrum licences with the relevant conditions of licence currently applied to the licences in the specific band, taking into account any differing characteristics such as Tier sizes, and the timing as to when those deployment requirements should apply. ISED is also seeking comments on the appropriateness of existing deployment requirements for private networks.*

ISED will consider alternative proposals for the deployment requirements for access spectrum licences. Such proposals should contain a rationale and discussion of their implications for ISED's policy objectives.

A16   CCSA supports the premise that access spectrum deployment conditions generally should match the deployment conditions for the specific band in question, subject to any necessary adjustments to reflect the smaller Tier 5 licensing areas.

CCSA supports the deployment ramp-up process described at paragraph 59 of the Notice of Consultation but, consistent with its comments in response to Q14, suggests that the deployment conditions should apply over a five-year licence term.

Q17   *ISED is seeking comments on its proposal to apply the conditions of licence set out in annex B to access spectrum licences issued through the proposed Access Licensing framework.*

A17   Generally, CCSA supports the proposal to apply the conditions of licence set out in Appendix B to the Notice of Consultation.

As indicated in its responses to Q14 and Q16 above, CCSA suggests that the condition relating to a three-year licence term should be changed to a five-year term.

CCSA also recommends that the Condition of Licence relating to mandated roaming should be considered carefully. CCSA has no issue with inclusion of mandated tower/antenna sharing in the conditions of licence for access licensees. However, fixed wireless deployments implemented under access licences would most likely not be technically compatible with mobile roaming requirements. CCSA therefore questions whether mandatory roaming should be included as a general Condition of Licence for access licences.

Q18   *ISED is seeking comments on its proposal to make 800 MHz cellular available for access spectrum licenses in rural and remote Tier 5 service areas in which the existing primary or subordinate has no deployment.*

A18   CCSA supports the proposal to make 800 MHz cellular available for access spectrum licenses and has no further specific comment to offer at this time.

Q19   *ISED is seeking comments on its proposal to modify the CTFA, where relevant, to change the existing fixed service allocation to primary status in the 824-849 MHz/869-894 MHz range, noting that the fixed service is already allocated on a primary basis in the 890-894 MHz portion.*

A19   CCSA supports the proposal to modify the CFTA and has no further specific comment to offer at this time.

Q20   *ISED is seeking comments on its proposal to make PCS blocks A to F available for access spectrum licenses in rural and remote Tier 5 service areas in which the existing primary or subordinate licensee has no deployment.*

A20   CCSA supports the proposal to make PCS blocks A to F available for access spectrum licenses and has no further specific comment to offer at this time.

Q21   *ISED is seeking comments on any other spectrum licence bands that meet the principles proposed in section 5 that could be considered for access spectrum licensing.*

A21   CCSA has no specific comment to offer at this time.

Q22   *ISED is seeking comments on the proposal to generally adopt the same technical requirements, including coordination requirements, as published in RSS-132 and SRSP-503 in the cellular band, and RSS-133 and SRSP-510 in the PCS band for future access spectrum licences.*

A22   CCSA has no specific comment to offer at this time.

Q23   *ISED is seeking comments on the above proposal to amend the Condition of Licence concerning "International and Domestic Coordination" for all existing spectrum licensees in blocks A and B of the cellular band and blocks A through F, inclusively, of the PCS band.*

A23   CCSA supports the proposal to amend the referenced Condition of Licence and has no further specific comment to offer at this time.

Q24   *ISED is seeking comments on its proposal that existing cellular and PCS stations under spectrum licences will be protected from access spectrum licence operations and would not be required to coordinate with new access spectrum licence operations in adjacent service areas.*

A24   CCSA supports this proposal but subject to the clarification that existing cellular and PCS operations remain in their existing configuration. Upgrades or changes to existing cellular or PCS deployments including changes to existing stations should have the requirement to co-ordinate with access spectrum license operations.

Q25   *ISED is seeking comments on its proposal that any future stations deployed by existing cellular and PCS spectrum licensees would be subject to the coordination rules in SRSP-503 and SRSP-510 applied at the new Tier 5 service area boundary where an access spectrum licence has been issued.*

A25   Consistent with its responses to Q11 and Q24, CCSA supports the proposal that any future stations deployed by existing cellular and PCS spectrum licensees would be subject to the referenced coordination rules and has no further specific comment to offer at this time.

Q26   *ISED is seeking comments on its proposal that existing radio licensees operating standard systems in the PCS band would be protected from access spectrum operations and access spectrum licensees may not trigger displacement of existing radio licences in the PCS band.*

A26   CCSA supports the proposal that existing radio licensees operating standard systems in the PCS band would be protected from access spectrum operations and has no further specific comment to offer at this time.

Q27   *ISED is seeking comments on the process for making access spectrum licences available and the options described above.*

A27   In response to the question as to whether access spectrum should be issued in a single block or in tranches, either option would be acceptable to CCSA. However, CCSA's preference is to see the spectrum issued in tranches.

As the Notice of Consultation suggests, release of all the blocks at once nationally could create a significant bottleneck in processing time and, in CCSA's view, possibly frustrate timely deployment of the spectrum. In addition, a phased release may allow stakeholders – especially the smaller ones – to get a better understanding of the playing field as the process unfolds. Finally, a phased release in tranches will probably support access to spectrum for by smaller applicants by spreading their required capital spends over time.

Having said that, all blocks in a specific service area should be released at the same time and not split between tranches. That approach would allow service providers to obtain multiple blocks in a service area as needed to promote the deployment of larger contiguous channels.

Q28   *Under both options, ISED is seeking comments on its proposal to begin access spectrum licensing three months after the publication of the decision.*

A28   CCSA supports the proposal to begin access spectrum licensing three months after the publication of the decision.

Q29   *Under both options, ISED is seeking comments on its proposals to limit the number of access spectrum licence applications to:*
- *Option 1: 20 per applicant per 12 month period*
- *Option 2: 5 per applicant at the opening of the access licensing process for each tranche*

A29   It is not completely clear to CCSA whether the proposed limits are intended apply to block, licence areas or a combination of both and clarification would be appreciated. Having said that, a limit of 5 licence areas per applicant per tranche would appear to CCSA to foster healthy competition without limiting the access licensee's opportunity for effective spectrum deployment.

Q30   *Under Option 2, ISED is seeking proposals on how it should prioritize Tier 5 licence areas and spectrum blocks if it adopts a sequential release of spectrum for access spectrum licensing. Proposals should address the key considerations of equitable geographic distribution, coverage, impacts on existing licensees, potential business cases, and timeliness.*

A30   CCSA has no specific comment to offer at this time.

Q31   *ISED is seeking comments on its proposal to issue site-specific access radio licences within rural and remote Tier 5 service areas under the Access Licensing framework.*

A31   CCSA has no specific comment to offer at this time.

Q32   *ISED is seeking comments on its proposal to follow its LMR licensing process to receive and review applications for access radio licences.*

A32   CCSA has no specific comment to offer at this time.

Q33   *ISED is seeking comments on its proposal not to limit the number of access radio licence applications an applicant may submit via the Spectrum Management System for these bands.*

A33   CCSA has no specific comment to offer at this time.

Q34   *ISED is seeking comments on potential eligibility restrictions for access radio licences.*

A34   CCSA has no specific comment to offer at this time.

Q35   *ISED is seeking comments on its proposal to apply the above conditions of licence to access radio licences.*

A35   CCSA has no specific comment to offer at this time.

Q36   *ISED is seeking comments on its proposal to allow broadband use in the 900 MHz LMR band as shown in figure 6.*

A36   CCSA supports the proposal to allow broadband use in the 900 MHz LMR band and has no specific comment to offer at this time.

Q37   *ISED is seeking comments on its proposal to issue access radio licenses in the 897.5-900.5 MHz and 936.5-939.5 MHz portions of the 900 MHz LMR band in rural and remote Tier 5 service areas and only in locations within those service areas where there will be no interference to existing LMR operations.*

A37   CCSA supports the proposal to issue access radio licenses in the 897.5-900.5 MHz and 936.5-939.5 MHz portions of the 900 MHz LMR band and has no specific comment to offer at this time.

Q38   *ISED is seeking comments on availability of equipment for the proposed broadband service, including the feasibility of modifying 3GPP band 8 equipment.*

A38   CCSA has no specific comment to offer at this time.

Q39   *ISED is seeking comments on the potential use cases of 3/3 MHz for broadband services, including the potential for 5G deployment.*

A39   CCSA has no specific comment to offer at this time.

Q40   *ISED is seeking comments on the feasibility of also making 896-901 MHz and 941-946 MHz available for broadband at the same time as 987.5-900.5 MHz and 936.5-939.5 MHz.*

A40   CCSA supports the proposal to make these bands available for broadband use but has no further specific comment to offer at this time.

Q41   *ISED is seeking comments on its proposal to use the same methodology for determining geographic separation for broadband service as already included in SRSP-506 for land mobile systems.*

A41   CCSA has no specific comment to offer at this time.

Q42   *ISED is seeking comments on whether the 1.5 MHz and 500 kHz of separation are sufficient to protect the adjacent band Air-Ground Radiotelephone Service, fixed service and Narrowband Personal Communications Service.*

A42   CCSA has no specific comment to offer at this time.

Q43   *ISED is seeking comments on the potential or actual benefits of subordinate licensing to increase rural broadband access and accommodating new innovative network usage.*

A43   CCSA has long considered that a streamlined, enforceable framework for subordinated licensing may well be the most effective way to put currently unused spectrum in the hands of independent communications providers on a localized basis which fits the operational needs of such providers. CCSA submits that such a mechanism, properly designed, could be an effective response to the barriers presented by auction of spectrum in relation to large geographic licence areas. In that respect, even auctions based on Tier 5 licence areas remain prohibitive – in terms both of process and price – to smaller communications providers and do not fit well with the highly localized network operations of such providers.

CCSA considers that a well-designed subordination framework can and should facilitate subordination of spectrum in a targeted manner that supports improvement and extension of the networks operated by such providers, especially in the rural and remote areas that many of them serve. Such a framework can be an important element in a coordinated approach to delivering 50/10 broadband service to many Canadians who live and work in such areas.

Q44 *ISED is seeking comments on ways in which to streamline the general application requirements for subordinate licences as set out in sections 5.6.3 and annex D of CPC-2-1-23. ISED also seeks proposals to streamline the application process for all subordinate licence applicants, including those in commercial mobile bands who must also provide material addressing the criteria and considerations in section 5.6.4 of CPC-2-1-23. In these proposals, ISED also seeks comments as to how parties can demonstrate (e.g., an attestation, or other commitment) that their request for a subordinate licence does not constitute a transfer, deemed transfer, or prospective transfer as discussed in section 8.2.1 above.*

A44 CCSA has no specific comment to offer at this time.

Q45 *ISED is seeking comments on facilitating subordinate licensing and encouraging secondary market transactions including:*
- *Should additional changes be made to existing licences that will encourage the use of subordinate licences as a means to help deploy more services?*
- *Given ISED's regulatory role, are there any issues or actions ISED should consider?*

A45 CCSA notes the discussion areas listed at paragraph 149 of the Notice of Consultation, as follows:

- establishing timelines for a licensee to respond to a request to enter into a subordinate agreement
- requiring that the Primary Licensee provide valid reasons for refusing to enter into a subordinate arrangement (e.g. an imminently planned deployment)
- potential consequences for failing to respond to a request.

As CCSA has stated, we consider an effective subordinated licensing framework to be an important tool for placing unused spectrum in the hands of competitive communications providers who will actually deploy that spectrum. For that tool to be effective, it is critically important that a straightforward and well-defined mechanism for approval of subordination applications be put into place.

With respect to timelines for response to subordination requests, CCSA submits, first, that firm timelines must be applied to all stages of the primary licence holders' response. As we have seen in relation to competitor requests for access to the support structures of incumbent utilities and telecommunications providers, any stage of the process which is not subject to a firm deadline is an opportunity for the incumbent to delay and frustrate access by potential competitors.

Second, given the over-arching objective to promote the timely deployment of currently unused spectrum in support of Canada's connectivity goals, timelines for responses should be short. CCSA suggests that the entire time permitted for response to a subordination request should not be more than a couple of months. Any longer or undefined timelines present a serious challenge to the operational and capital planning of an applicant for subordinated spectrum.

Again consistent with recent submissions CCSA has made in relation to support structure access issues, primary licensees should be required to provide detailed, valid reasons for denial of any application for subordinated licensing of unused spectrum. Again, strict timelines should apply to the provision of such reasons.

As to consequences for failing to respond to a request, CCSA submits that mandated response timelines, including the provision of valid reasons for denial of a subordination request, should be included in the primary licence holder's Conditions of Licence by way of the Minister's power, under s. 5(1)(b) of the *Radiocommunication Act*, to amend the terms and conditions of any licence. On that basis, a failure to respond in accordance with the amended Conditions of Licence would attract the same consequences as would a failure to meet any other Condition of Licence. CCSA suggests, further, that the policy framework to be applied here could be essentially the

same as that which currently applies to licensing for point-to-point authorizations.

Q46   *ISED seeks comments on what additional information, if any, should be included in the draft form shown in annex D.*

A46   CCSA has no specific comment to offer at this time.

Q47   *ISED is seeking comments on its proposal to remove the current restriction on database hosting in order to facilitate cloud-based database hosting solutions.*

A47   CCSA supports the proposal to remove the current restriction on database hosting but has no further specific comment to offer at this time.

Q48   *ISED is seeking comments on its proposal to allow the use of TV channels 3 and 4 by all types of WSD.*

A48   CCSA strongly supports the Department's proposal to allow the use of TV channels 3 and 4 by all types of WSD. However, we do note that, as matters stand today, there is a limited base of radio equipment that can use this spectrum and that new equipment will be required to support effective deployment of this spectrum for the delivery of broadband service.

CCSA also notes that a large amount of spectrum would be required to support broadband delivery in these bands. As one CCSA member remarked:

A large amount of spectrum would be required to offer a higher speed package on it

o   Typically licensing is done in 6Mhz channels

o   Max capacity/channel bonding is in around the 24Mhz per radio based on current radio model availability

o If bonding 6Mhz channels, continuous channel licensing would be required in order to successfully bond multiple channels to deliver higher speeds via the access point / base station

- IE – we'd need 4x back to back 6Mhz channel blocks to successfully bond to the full capacity 24Mhz channel size

- 24Mhz will allow the access point to deliver speeds (capacity) of up to ~104Mbps

As a reference, our current unlicensed platform is able to deliver up to ~150Mbps in a 20Mhz channel configuration (under prime conditions).[1]

However, as the same member noted, access to this spectrum "would be beneficial in use around densely treed areas (lakes, Northern areas of the Network) as it has the ability to penetrate tree growth". As such, this spectrum may be especially useful to the many independent communications distributors who operate networks in extremely challenging geographic environments.

For those reasons, while there may be technical challenges involved in the deployment of this spectrum to deliver broadband service, CCSA strongly supports the Department's proposal to allow its use for broadband network deployments.

Q49   *ISED is seeking comments on its proposal to no longer renew existing RRBS licences after March 31, 2027.*

A49   CCSA has no specific comment to offer at this time.

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[1] Access Communications Cooperative email to C. Edwards, September 14, 2021.

October 22, 2021
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Subject: Consultation on New Access Licensing Framework, Changes to Subordinate Licensing and White Space to Support Rural and Remote Deployment

1. The Canadian Electricity Association (CEA) is the voice of more than 40 Canadian electrical utilities. CEA members include electrical generation, transmission, and distribution companies from all provinces and territories.

2. The electrical infrastructure that Canadian utilities operate is critical to the safety, security, and economy of Canada, and is also a key enabler of Canada's decarbonization goals. As reliance on the grid has grown, and the complexity of the generation, transmission, and distribution systems increase, resilient communications networks with access to broadband spectrum are increasingly critical to the safe and reliable operation of the electric system.

CEA Generally Supports ISED's Approach to Private Broadband & Access Licensing

3. CEA's overarching view on this consultation and its proposals is that both Access Licensing (the broad idea of use-it-or-share-it to have unused spectrum put into service by new operators) and Access Spectrum (spectrum for industrial private broadband networks) are excellent for Canadians. Access Licensing will promote rural and remote internet connectivity and private broadband in the Band 8 spectrum will give industry the tools needed to innovate, grow, and compete globally. In the following sections we respectfully submit our recommendations on how to optimize the effectiveness of the department's innovative policy proposals.

4. We thank ISED for providing a forum to discuss the merits of optional subordination. We do see subordination as a useful tool for large service providers with similar market presence and commercial interests but we have concerns with the effectiveness of subordination to drive positive outcomes outside those few operators. That said while optional subordination is not useful for groups other than those large service providers the outcome of the Access Licensing and Access Spectrum could alleviate many of subordinations challenges and allow improved spectrum use. We also have comments regarding TV whitespace. Most notably, we are supportive of the concept, but note the lack of a device ecosystem to support its utilization.

5. CEA's answer to each of the consultation questions can be found in *Appendix 1*, but we advise that ISED first review paragraphs 6 to 30 which provide a coherent narrative of our answers.

CEA Comments Regarding Access Licensing

6. We see the Access Licensing proposal as being aligned with CEA's "use-it-or-share-it" advocacy as

submitted to ISED in past consultations[1,2,34]. CEA is generally in favour of the proposal put forward by ISED. Our suggestions on how to maximize the effectiveness of the program follow.

Grid Cells Instead of Tier 5 Areas

7. ISED should allocate exclusive use Access Licenses based on the Grid Cells that the department already uses for subordination. Square or hexagonal Grid Cells of approximately 25 km^2 or 3 minute by 3 minute would be suitable[5]. Tier 5 areas are simply too large for exclusive use Access Licensing to deliver on the policy objectives of this consultation, most notably improvements to rural and remote broadband connectivity. For an example of how large remote Tier 5 zones are, the northern half of Saskatchewan is subdivided into only three Tier 5 areas[6]. Each of these three Tier 5 areas are as big, or larger, than the whole of New Brunswick or Nova Scotia. An Access License operator will not deploy coverage over the geographic equivalent of a province if their business case is isolated to a few towns or an industrial complex. Worse, given that due to the clustering population into urban centres, even with mandatory deployment criteria in the 80 or 95% range, the Access License operator could deploy in a few larger towns and leave the remainder of the Tier 5 area unavailable for use. Therefore the existing challenges of lack of deployment and blocked spectrum would likely be repeated if Tier 5 areas are not further subdivided.

8. Grid Cells are an approach already used and approved of by ISED and the department has the tools as laid out in the relevant standard radio system plans (SRSPs). Paragraph 76 of the consultation already references these requirements.[7]

9. Other options for subdividing Tier 5 areas are possible. Allowing subdivision or subordination of Access Licenses could be a mitigation, but Grid Cells is likely more efficient to manage. Alternatively, overlapping non-exclusive Access Licenses could be granted at the Tier 5 scale but as this solution may cause more interference it is not as effective as exclusive use. For these reasons CEA holds that Grid Cell subdivision and allocation of territory is the best way for Access Licenses to proceed. It is practical and it will achieve the policy objectives of this consultation, while also preventing a perpetuation of the problems (unused spectrum and lack of coverage) which this consultation is working to resolve.

Access Licensing Should Apply Broadly

10. Access Licensing is a new process, therefore CEA recommends beginning with a manageable pilot. While ISED must determine what it deems to be manageable given its resources, ideally CEA recommends that a

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[1] CEA initial comments to SLPB-002-20: https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/SLPB-002-20-Canadian-Electricy-Association-comments.pdf/$file/SLPB-002-20-Canadian-Electricy-Association-comments.pdf

[2] CEA reply comments to SLPB-002-20: https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/SLPB-002-20-Canadian-Electricity-Association-ReplyCommentsREVISED.pdf/$file/SLPB-002-20-Canadian-Electricity-Association-ReplyCommentsREVISED.pdf

[3] CEA initial comments on SMSE-014-20: https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/SMSE-014-20-CEA-comments.pdf/$file/SMSE-014-20-CEA-comments.pdf

[4] CEA comments to SLPB-001-21: https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/SLPB-001-21-Canadian-Electricity-Association-Comments.pdf/$FILE/SLPB-001-21-Canadian-Electricity-Association-Comments.pdf

[5] Grid Cell reference: ref https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf10943.html

[6] Service areas for competitive licensing: https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/h_sf01627.html#tierMap, retrieved on August 26th 2021

[7] These specifications are detailed in relevant Standard Radio Systems Plans (SRSP) and oftentimes include a minimum geographic separation distance between two service areas or a maximum allowable field strength at the service area boundary where operations beyond these technical parameters may require coordination between impacted licensees.

pilot be resolved within 1 calendar year. The 1 calendar year is recommended so that groups that wish to use Access Licensing can do so quickly. Once that pilot is resolved, the Access Licensing program should be greatly expanded such that any licensed 3GPP spectrum (thus excluding all come all serve) that is unused (including in urban/metro as well as rural and remote areas) in any Grid Cell can be reallocated via the Access License mechanism.

11. For an example of spectrum that should be available to Access Licenses we recommend that ISED reissue PCS licenses at the Tier 5 scale for non-exclusive use and at the Grid Cell level for exclusive use. The PCS spectrum is an example of allocated but under deployed spectrum. Similarly, given the forthcoming displacement of WBS it is also recommended that WBS licenses be convertible to Access Licenses for the impacted Grid Cells. If WBS licenses are convertible it would allow current WBS operators to continue using the 3650-3700 MHz spectrum in select areas while still allowing the auctioning of the rest of the spectrum including in urban and metro areas. For urban and metro areas, Grid Cells could be further subdivided, to align with land use parcels as this may further reduce the risk of interference, and enable developers, land owners, manufacturing plants, ports, etc. to deploy system localised 5G to support their modernization, as well as distributed antenna or shared RAN systems.

12. Using CEA's proposed Grid Cell subdivision would enable a new Access License proponent to approach ISED and propose a region that they want to deploy in. These applications to ISED, and not the spectrum holder, are important because it will allow Access License applicants to proceed quickly and in turn quickly deliver new telecommunication connectivity to Canadians. The applicant would have to prove that they will not cause interference to **existing** operations of the spectrum holder in adjacent Grid Cells but otherwise the new operator would be free to deploy in that region.

13. CEA also wishes to expand on its suggestion that ISED open all 3GPP bands if a sufficient period of time has passed since the original issuance of the license, and/or if deployment requirements of the license have not been met or have already been met in a localised urban core, with vast areas left without coverage. In this case it is advised that in the unused area the spectrum should be opened to development by groups other than the current spectrum holder. CEA recommends 5 years be the deployment window. After this period of time if a region is inactive it should be opened to Access Licensing. CEA sees this as an organic solution to ongoing problems of the lack of spectrum subordination. If 3GPP spectrum is unused then others may use it and if those new groups deploy then they would become the incumbents. Should the access licensee fail to deploy the spectrum then it would revert to being available, just as before. This way spectrum that is not in use is available to whoever wants it which will improves wireless coverage and disincentivizes hoarding/speculation on spectrum.

14. Relatedly, CEA does not support strict restrictions on who can apply for Access Licenses, but Municipalities, First Nations, Wireless Internet Service Providers (WISPs), and Critical Infrastructure Operators, who come forward with concrete development plans should be favoured. Access Licenses applicants will still be subject to deployment requirements and their applications should include detailed and credible plans for the use of the Access License spectrum so that ISED can validate the request. But beyond those requirements applications should be open to those who can demonstrate that they are capable of putting the spectrum to good use.

15. It is important that the Access Licensing policy encourage deployment by new players with focused business models. A mechanism must be provided such that the Access Licensing user is able to obtain financing and is assured a reasonable lifespan for their investment. Another policy consideration that ISED should add to Access Licensing is a requirement in the case of a deployment occurring using the Access License framework while an incumbent operates in part of the Tier 5 area, i.e. the Tier 5 area is

subdivided as we have suggested. In this instance it should be stipulated that the Access License holder cannot be displaced until the original spectrum holder can prove that their own spectrum options have been exhausted. If this is not done then potential Access License deployers will likely be wary of investing if, under ISED's mandatory tower sharing policy[8], they invest and deploy their tower, then have to give tower access to the original spectrum holder, and are consequently bumped out of the Access License spectrum by the original spectrum holder. CEA also supports the proposal that existing spectrum holders must deploy all the spectrum available to them in a given area before requesting Access Licenses.

Eligibility & Licensee Fees

16. Given the current MHz per population fee model, we note our that our proposal whereby Tier 5 areas be subdivided may leave areas with no/few people which would lead to functionally free licenses. We note that while the spectrum fee must be very low given the cost of serving, and limited revenue collected from a small number of remote and rural users, it is reasonable to set minimum fees to be paid by Access Licensees. Such minimum fees should be based on administrative costs.

17. One point of clarification that CEA requests from ISED regards Access Licensing, is that network sharing be permitted. This may be in the form of multi-operator core networks (MOCNs) and or multi-operator radio access networks (MORANs), or shared distributed antenna systems. Members have reported that the existing market approaches in Canada often results in overlapping campus or building system operated by each incumbent. Access spectrum licensing may result in improved sharing outcomes with a third party is able to use Access Licensing to establish a neutral radio access network host. In this way Access Spectrum and Access Licensing might play a complementary role.

CEA Comments Regarding Access Spectrum (Spectrum for Private Broadband Networks)

18. CEA is supportive of the Access Spectrum approach laid out by ISED toward providing broadband spectrum for private broadband networks. We see private broadband networks for industry as key piece of industrial policy where we have seen Canada lag international jurisdictions and this proposal is heartening. We offer a few specific comments regarding how to optimize band 8 for industry. Specifically we adamantly suggest that band 8 international be allowed alongside the modified US version and that this band 8 block of spectrum be made only available to critical infrastructure operators.

Band 8 International & Pseudo Band 8 United States can Coexist

19. As you acknowledge in the consultation document, Band 8 US is a not Band 8 but rather a modified +39 MHz split configuration owned by Anterix. This modified for US version of band 8 system does not support 5G, does not support NB-IoT and has a limited device ecosystem. Because of this, if Canada only commits to the US band plan we will not only cut off our industries from the international band 8 device ecosystem (which is orders of magnitude larger than the Anterix system in the US) but we will also limit the ability to deploy NB-IoT systems or to combine a 5G compatible band 8 with other bands to form robust 5G developments. This is true not just of device buyers but Canada's own device manufacturers as well. If our manufacturers can buy off the shelf band 8 radio chips from the international market then innovations designed to work in Canada can be exported to Europe and Asia.

20. Paragraph 116 of the consultation states that the international band 8 plan spectrum duplex is hampered in Canada because of incumbent fixed multi-point communication systems (MCSs) and wireless microphones. In discussion with industry experts, pagers were also identified as an incumbent. CEA

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[8]Revised Frameworks for Mandatory Roaming and Antenna Tower and Site Sharing: https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf10546.html

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questions how large a hurdle to the international band 8 system these incumbents are. Fixed MCS systems are rare, and usually only employed in cities. The vast majority of Canada's geography is not encumbered by a fixed MCS and as these systems are fixed (immobile) they do not need protection the same way a mobile system does. Regarding the other band 8 incumbents, wireless microphones and pagers, CEA has spoken to telecommunication engineering industry experts and these two device classes can co-exist with international band 8 systems owing to low power, flexible systems, and geographic concentration in cities, and so we do not see them as substantive barriers to the use of band 8 international equipment outside urban/metro locations.

21.   CEA is not asserting that Canada should walk back its proposed allowance of the US band 8 system. This is a good solution for low band private broadband networks in urban areas and potentially other places as the device ecosystem develops. But rather, we contend that if the ISED wishes to create a system for industrial private networks that is future looking and which can best meet the goals of this consultation then the international band 8 systems, with their standard band 8 spectrum duplex, should be allowed as well as their US counterparts.

22.   We acknowledge that work would have to be done by the department to write rules for both band 8 US and band 8 international as well as coordinate the coexistence of different systems. However, walking away from the international band 8 ecosystem and a massive ecosystem of devices, most importantly specialised embedded sensors, as well as the future opportunity to enable band aggregation via 5G because of rare and niche market incumbents would not serve industrial operators well and could damage Canada's global competitiveness as technology evolves past us.

23.   To summarize and as a direct answer to question 40, but with an expanded spectrum range, ISED should open both Band 8 International 896-902 MHz and 941-947 MHz available for broadband at the same time as Band 8 US 897.5-900.5 MHz and 936.5-939.5 MHz. This should be done with a licensing approach that ensures no interference to existing licensed systems. In urban areas the Anterix 39 MHz split will likely be required, however, in rural and remote areas with very little spectrum deployed in any band, using international Band 8 will offer significantly better outcomes for the operator with no measurable downside.

Sharing Band 8 & Eligibility

24.   Similar to our comments for Access Licensing CEA encourages ISED to enable Radio Access Network sharing in the proposed band 8 systems. Sharing of resources is an option that should be open to industry to allow them to find the best solutions for their businesses.

25.   Finally, CEA proposes that applications to use private broadband in band 8 be restricted to critical infrastructure operators IoT, security, and mobile workforce systems. While, we do not believe that non-industrial applicants would even seek band 8 we recommend the department should pre-emptively say who they envision to have access to this block of spectrum designated for private networks.

CEA Comments Regarding License Subordination

26.   CEA respectfully questions ISED's premise and position regarding subordination. If subordination was truly in the best interests of the spectrum holder[9] then it would be common and ISED would not be asking how to encourage subordination. Instead it should be taken as evidence that subordination, only works

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[9] Paragraph 148 of the consultation document in part reads "There are also benefits to the existing licensee in terms of potential revenue and the general rule that deployment by a subordinate licensee will count toward meeting the primary licensee's responsibilities."

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between companies with similar commercial interest. Despite the clear benefits to Canadians, reallocation of unused spectrum is not something that can be resolved without a new regulatory approach. Reading this consultation document it appears that ISED is prepared to use such a regulatory approach to create a mandatory subordination policy.

27.   Here then, CEA questions what the principle difference is between mandatory subordination and Access Licensing for all 3GPP spectrum? If mandatory subordination is brought in, then functionally that will be Access Licensing for all spectrum. This leads to the questions of whether ISED needs two separate tools (mandatory subordination and Access Licencing) to accomplish the same ends? As a principle, CEA contends that as a best practice duplication of processes should be avoided in regulatory environments. In this regard, voluntary subordination as is in place today, paired with Access Spectrum licensing seems to be a reasonable solution. When commercial interest are met spectrum holders can subordinate spectrum to each other, and when spectrum is left un-used for a significant time, ISED can re-allocate the unused spectrum to other parties.

28.   As noted earlier we also see Access Licensing as a swifter solution because those applications go to ISED not the spectrum holder who, for competitive reasons, may delay/hamper deployments of the new entrant.

CEA Comments Regarding White Space Policy Updates

29.   In general CEA is supportive of fewer restrictions on whitespace, and more available whitespace opportunities. We support the removal of whitespace database hosting requirements as cloud solutions (local or international) should be open to industry. TV channels 3 & 4 should be open to all whitespace devices (WSDs) so that there is more whitespace opportunities, and the 2027 end to rural and remote broadband systems (RRBS) licenses is a good policy that opens more spectrum and device ecosystems choices for Canadian companies. That said CEA is not sure that there are 3GPP capable devices for these whitespace spectrum blocks. This limited device ecosystem will reduce the viability of whitespace and industry will likely continue to favour 3GPP systems but as we've reiterated throughout this consultation, options for industry should be preserved.

Conclusion

30.   In closing we thank ISED for proposing innovative solutions to support industry and people in rural and remote locations. We look forward to continuing our engagement with you on these and other important topics.

All of which is respectfully submitted.

Sol Lancashire
Manager Telecom Engineering, BC Hydro
Chair, CEA Operating Technology & Telecommunications Committee

Channa Perera
Vice President, Regulatory Affairs and Best Practices
Canadian Electricity Association

Appendix 1 – Short answers to specific questions

Question	CEA Answer
Q1 ISED is seeking comments on its proposal to implement a new Access Licensing framework to make licences available in rural and remote areas where there is unused spectrum.	Yes this is a good idea and one that should be pursued with haste. With the growth of 3GPP technologies in the public safety, industrial, and manufacturing sectors there is a growing need for Private 4G/5G and LPWAN (NB-IoT) spectrum. The need for private networks is particularly apparent in rural and remote areas where systems often need to operate isolated from centralized and cloud infrastructure or with intermittent backhaul.
Q2 ISED is seeking comments on its proposal to issue access spectrum licences and access radio licences on a first-come, first-served basis.	Yes this is a good idea and one that should be pursued with haste. First-come-first-serve is the preferred solution for reliable protected spectrum that can attract a stable investment. First-come-First-serve will work well as long as mitigations are in place to prevent blocking or hording of spectrum. Foremost the license areas must be small enough to enable the operator a viable system without including areas that would be better served by a different entity. 25 km^2 grid squares should be used.
Q3 ISED is seeking comments on its proposal to use the rural and remote Tier 5 service areas as the basis to determine the rural and remote areas in which it will apply access licensing.	Tier 5 is suitable for non-exclusive licensing, including use-it-or-share-it licenses, but for exclusive licenses 25 km^2 Grid Cells should be used similar to the allocation used for spectrum subordination. This allows optimized use by a variety of potential users including small communities and industry.

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Q4 ISED is seeking comments on its proposed principles to be used when considering spectrum licensed or radio licensed bands where the proposed Access Licensing framework will apply	Wherever possible the spectrum should be assigned with alignment to 3GPP band plans for Canada or other regions. The following bands are suggested: 410-415 MHz uplink and 420-425 MHz downlink (band 87) 412-417 MHz uplink and 422-427 MHz downlink (Band 88) 450-455 MHz uplink and 460-465 MHz downlink (band 73) 821-824 MHz uplink and 866–869 MHz downlink (Band 26) 896 to 902 MHz uplink and 941-947 MHz downlink (Band 8) 896 to 902 MHz uplink and 935-941 MHz downlink (US) 617-652 MHz Downlink and 663-698 MHz uplink (band 71); 1850 MHz to 1990 MHz; TDD (Band 35/36/39) 1850-1910 MHz uplink and 1930-1990 MHz downlink (band 2) 3650 to 4200 MHz TDD (Band 48/43/n77) 700 Mhz (Band 12 & 13) 1700 Mhz (Band 66) Care should be taken to consider any band that is underutilized in rural and remote areas, including those bands already allocated but not in use.

	Assignment of 200 kHz channel is suitable for LPWAN, otherwise 3, 5, and 10 MHz channels are needed. The conditions laid out are reasonable and fair. The question of what constitutes sufficient spectrum is important though. Narrowband IoT could be useful with narrow slivers of spectrum while other applications, remote operation and video for example, require much more. The spectrum requirement is based on the use case.
Q5 ISED is seeking comments on other principles it should take into account when considering bands where the proposed Access Licensing framework will apply.	All underutilized bands where interference to the incumbent licenses or use can be avoided. If a use-it-or-share-it approach is used, then once a share-it licensee is active, the use-it licensee should be required to exhaust other spectrum holding options before forcing a displacement of the share-it user.
Q6 ISED is seeking comments on adopting a flexible use licensing model for fixed and mobile services when issuing access spectrum licences.	Yes, flexible use with the mix of fixed and mobile functionality is a good option and one that ISED should pursue.
Q7 ISED is seeking comments on its proposal to use Tier 5 service areas for the proposed access spectrum licences and any associated potential technical challenges should this process be applied to all commercial mobile or flexible use frequency bands.	In a shared license regime Tier 5 is suitable, in a first-come-first-serve regime 25 km^2 grids should be used. Yes this should be applied to all commercial or flexible use frequency bands.
Q8 ISED is seeking comments on any future adjustments to the licence areas for access	ISED should consider breaking Tier 5 regions into populated and unpopulated areas; or use 25 km^2 grid squares to allow very small rural and

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spectrum licences, including consideration of more localized areas (e.g. smaller than Tier 5).	remote communities or isolated industrial users to deploy in the vicinity of their establishments.
Q9 ISED is seeking comments on its proposed process for identifying rural and remote Tier 5 service areas in which there is unused spectrum that would be made available for access spectrum licensing.	Let industry and communities apply. Criteria for consideration have already been identified. If the application meets the criteria it should be allowed. The people who need spectrum know they need spectrum so a bottom up approach where users self-identify should be the most efficient. ISED should be cautious of ghost deployments that are in-service only to hold spectrum resources.
Q10 ISED is seeking comments on its proposal to impose a condition of licence to prohibit existing primary and subordinate licensees' deployment in areas for which an access spectrum licence has been issued.	CEA agrees that such steps should be taken.
Q11 ISED is seeking comments on its proposal that stations already deployed by primary or subordinate spectrum licensees within their service areas would be protected from subsequent deployment under access spectrum licences.	CEA agrees, this is a reasonable position as incumbents should be protected from signal interference.
Q12 ISED is seeking comments on the above options for eligibility. 49. Under Option 1, in order to be eligible for an access spectrum licence, at the time of application, an applicant must not hold a	Eligible entities should be one of Critical Infrastructure Operators, First Nations, Municipalities, and WISPs (existing or prospective) should be eligible. To ensure system reliability, minimize interference and ensure safety CEA recommends that all

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spectrum licence for undeployed commercial mobile, fixed, or flexible use spectrum, in the same Tier 5 licence area as the area for which it is seeking an access spectrum licence. This eligibility requirement is in addition to the general eligibility requirements set out in section 9 of the *Radiocommunication Regulations*. 50. Under Option 2, in order to be eligible for an access spectrum licence, at the time of application, an applicant must not hold a spectrum licence, whether deployed or undeployed, for commercial mobile, fixed, or flexible use spectrum, in the same Tier 5 licence area as the area for which it is seeking an access spectrum licence. This eligibility requirement is in addition to the general eligibility requirements set out in section 9 of the *Radiocommunication Regulations.*	applications for Access Licenses be stamped by a qualified Radio-Frequency engineer. Applicants should come to ISED with a substantive plan for the spectrum use and then be subject to deployment requirements. CEA strongly prefers option 1, in concert with our Grid Cell recommendation, such that an incumbent may not request Access License spectrum if they have undeployed commercial mobile, fixed, and flexible use spectrum. If an entity seeks access spectrum but they hold spectrum they may turnover their unused spectrum.
Q13 ISED is seeking comments for Option 1 and Option 2, specifically should the deployed and/or undeployed spectrum be based on any frequency band (e.g. 2500 MHz) currently held by the applicant or only the band (e.g. PCS band) for which the application is made?	To make sense, it should be based on all 3GPP commercial mobile, fixed and flexible use bands. Todays LTE and 5G networks are multiband. More spectrum means more capacity. If the MNO needed capacity in that Tier, they would have deployed in that Tier.
Q14 ISED is seeking comments on its proposal to issue access spectrum licences with a three-year licence term and the proposed wording of the condition of licence above. **The term of this licence is three (3) years.** **At the end of this term, the licensee will have a high expectation that a**	Maximum of 3 years to meet the deployment obligations. +2 terms of 7-10 years for spectrum use starting the year the licensee meets the deployment obligations. This is to account for the fact that these Tier 5 are low population and hard to reach areas. It takes years to plan and deploy infrastructures. No investment will be committed, and

new licence will be issued for an equivalent licence term unless a breach of licence condition has occurred, a fundamental reallocation of spectrum to a new service is required, or an overriding policy need arises.	engineering will be done without an Access license. For industrial sectors and critical infrastructures like utilities, this is not only a matter of the base station deployment that needs to be taken into account, the devices deployed are also sparse and isolated and represent a major part of the commitment to invest. The business case is planned over a 15–20-year lifetime. The communication is an enabler for the business investment and not the primary business activity of industrial and critical infrastructure operators.
Q15 ISED is seeking comments on its proposal that access spectrum licences not contain transfer, subdivision or subordination privileges.	CEA mostly agrees, with two caveats. 1) Transfers should be allowed for existing deployments, subject to ISED approval if the operator is bought by another company, or goes bankrupt. This provision will protect service if the ownership of the access license changes. 2) Multi-Operator Core Networks (MOCNs) should be allowed to operate in the access license framework. MOCNs are a valuable tool for groups to share resources and they should be allowed. If Tier 5 is used then subdivision of the tier should be permitted. That said CEA's firm recommendation is that Grid Cells are used instead of Tier 5.
Q16 ISED is seeking comments on its proposal to	Initial term –

align the deployment conditions for access spectrum licences with the relevant conditions of licence currently applied to the licences in the specific band, taking into account any differing characteristics such as Tier sizes, and the timing as to when those deployment requirements should apply. ISED is also seeking comments on the appropriateness of existing deployment requirements for private networks. ISED will consider alternative proposals for the deployment requirements for access spectrum licences. Such proposals should contain a rationale and discussion of their implications for ISED's policy objectives.	While a 3 year makes senses, it could limit the ability of WISPs to find financing. CEA asks whether reasonable expectation of renewal is good enough to secure funding. Renewal term - We recommend a maximum of 3 years to meet the deployment obligations. Afterword, terms of 7-10 years for spectrum use starting the year the licensee meets the deployment obligations. This is to account for the fact that these Tier 5 are low population and hard to reach areas. It takes years to plan and deploy infrastructures. No investment will be committed, and engineering will be done without an Access license. For industrial sectors and critical infrastructures like utilities, this is not only a matter of the base station deployment that needs to be taken into accounts, the devices deployed also sparse and isolated and represent a major part of the commitment to invest. The business case is planned over a 15–20-year lifetime. The communication is an enabler for the business investment and not the primary business activity of industrial and critical infrastructure operators.
Q17 ISED is seeking comments on its proposal to apply the conditions of licence set out in annex B to access spectrum licences issued through the proposed Access Licensing framework.	What will be the conditions specific for a private use (industrial, critical infrastructure) associated with the Access spectrum licence? Will all the obligations for commercial use applies?
Q18 ISED is seeking comments on its proposal to make 800 MHz cellular available for access spectrum licenses in rural and remote Tier 5	CEA disagrees regarding the 'no deployment' portion. A very large T5 region may have a few base stations along a highway or key municipality

service areas in which the existing primary or subordinate has no deployment.	and then thousands of km^2 of unserved area. An access license should be permitted outside the served area on an non-interference basis. If an Access License deployment will not interfere with incumbents then those new deployments should be valid.
Q19 ISED is seeking comments on its proposal to modify the CTFA, where relevant, to change the existing fixed service allocation to primary status in the 824-849 MHz/869-894 MHz range, noting that the fixed service is already allocated on a primary basis in the 890-894 MHz portion.	CEA agrees.
Q20 ISED is seeking comments on its proposal to make PCS blocks A to F available for access spectrum licenses in rural and remote Tier 5 service areas in which the existing primary or subordinate licensee has no deployment.	CEA agrees with the spectrum allocation, but disagrees with the no deployment criteria. A very large T5 region may have a few base stations along a highway or key municipality and then thousands of km^2 of unserved area. An access license should be permitted outside the served area on an non-interference basis. If an Access License deployment will not interfere with incumbents then those new deployments should be valid.
Q21 ISED is seeking comments on any other spectrum licence bands that meet the principles proposed in section 5 that could be considered for access spectrum licensing.	All 3GPP bands should be opened to Access Licenses except those bands already operating in all-come-all-serve. It will fall to the new deployers to not interfere with any incumbents but otherwise all spectrum should be open for development.
Q22 ISED is seeking comments on the proposal to generally adopt the same technical requirements, including coordination	CEA agrees

requirements, as published in RSS-132 and SRSP-503 in the cellular band, and RSS-133 and SRSP-510 in the PCS band for future access spectrum licences.	
Q23 ISED is seeking comments on the above proposal to amend the Condition of Licence concerning "International and Domestic Coordination" for all existing spectrum licensees in blocks A and B of the cellular band and blocks A through F, inclusively, of the PCS band.	CEA agrees
Q24 ISED is seeking comments on its proposal that existing cellular and PCS stations under spectrum licences will be protected from access spectrum licence operations and would not be required to coordinate with new access spectrum licence operations in adjacent service areas.	CEA agrees
Q25 ISED is seeking comments on its proposal that any future stations deployed by existing cellular and PCS spectrum licensees would be subject to the coordination rules in SRSP-503 and SRSP-510 applied at the new Tier 5 service area boundary where an access spectrum licence has been issued.	CEA agrees, but again Tier 5 areas should be subdivided.
Q26 ISED is seeking comments on its proposal that existing radio licensees operating standard systems in the PCS band would be protected from access spectrum operations and access	CEA agrees

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spectrum licensees may not trigger displacement of existing radio licences in the PCS band.	
Q27 ISED is seeking comments on the process for making access spectrum licences available and the options described above. **Option 1: Release of all available blocks, with revised service standard** **Option 2: Sequential release of "tranches" of spectrum blocks**	ISED should hybridize these two approaches. Access licensing is a new procedure so an initial release of a tranche of blocks (option 2) to act as a test run would be a good idea. After that and if kinks need to be fixed let anyone and everyone apply (option 1)
Q28 Under both options, ISED is seeking comments on its proposal to begin access spectrum licensing three months after the publication of the decision.	ISED should consider and favour operator diversity such that connectivity is more resilient.
Q29 Under both options, ISED is seeking comments on its proposals to limit the number of access spectrum licence applications to: • Option 1: 20 per applicant per 12 month period • Option 2: 5 per applicant at the opening of the access licensing process for each tranche	It is not apparent the benefit of limiting applications; however, option 1 would be acceptable to CEA members. Numbered companies and other means may defeat this condition. Option 2 is not advised as it would limit the ability of new parties to raise capital. The application should be permitted whenever the party established a need. CEA recommends a hybrid approach to these two options, see question 27.
Q30 Under Option 2, ISED is seeking proposals on how it should prioritize Tier 5 licence areas and spectrum blocks if it adopts a sequential release of spectrum for access spectrum licensing.	ISED should reach out to groups such as First Nations Connectivity Consortium, and CanWISP to identify areas. These are the

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Proposals should address the key considerations of equitable geographic distribution, coverage, impacts on existing licensees, potential business cases, and timeliness.	people who know where connectivity needs to be improved. Additionally ISED can coordinate internally and with the CRTC to identify areas that are both underserved and actively working to improve connectivity.
Q31 ISED is seeking comments on its proposal to issue site-specific access radio licences within rural and remote Tier 5 service areas under the Access Licensing framework.	CEA agrees, this is reasonable and alignment should make it easier for both ISED and industry.
Q32 ISED is seeking comments on its proposal to follow its LMR licensing process to receive and review applications for access radio licences.	Yes, this is reasonable
Q33 ISED is seeking comments on its proposal not to limit the number of access radio licence applications an applicant may submit via the Spectrum Management System for these bands.	Yes this is reasonable.
Q34 ISED is seeking comments on potential eligibility restrictions for access radio licences.	To ensure system reliability, minimize interference and ensure safety CEA recommends that all applications for Access Licenses be stamped by a qualified Radio-Frequency engineer. Applicants should come to ISED with a substantive plan for the spectrum use and then be subject to deployment requirements. CEA recommends that applications from Critical Infrastructure Operators, First Nations, Municipalities, and WISPs (existing or prospective) should be eligible be favoured.

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Q35 ISED is seeking comments on its proposal to apply the above conditions of licence to access radio licences. **The licensee shall, within 30 calendar days following a request from ISED, provide a summary of all data for the radio equipment and system related to this licence as set out in the request. Data may include, but is not limited to: channel loading, usage and capacity, and bandwidth.**	CEA agrees.
Q36 ISED is seeking comments on its proposal to allow broadband use in the 900 MHz LMR band as shown in figure 6.	CEA agrees
Q37 ISED is seeking comments on its proposal to issue access radio licenses in the 897.5-900.5 MHz and 936.5-939.5 MHz portions of the 900 MHz LMR band in rural and remote Tier 5 service areas and only in locations within those service areas where there will be no interference to existing LMR operations.	CEA agrees, and notes that +45 MHz, allowing access to the world wide 3GPP ecosystem of Band 8, many devices, and embedded sensors, and 200 kHz NB-IoT technology, is a much better option. CEA notes that areas smaller than Tier 5 can be used with the non-interference clause proposed here.
Q38 ISED is seeking comments on availability of equipment for the proposed broadband service, including the feasibility of modifying 3GPP band 8 equipment.	CEA understands that equipment is partially available but is in far less supply than the international band 8. The limited supply of Anterix compatible equipment, particularly NB-IoT sensors, and rugged handsets dramatically reduces the value this allocation.

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Q39 ISED is seeking comments on the potential use cases of 3/3 MHz for broadband services, including the potential for 5G deployment.	We don't understand how a 5G deployment would occur under the 3/3 MHz channels. Currently, the minimum channel width for 5G is 5 MHz.
Q40 ISED is seeking comments on the feasibility of also making 896-901 MHz and 941-946 MHz available for broadband at the same time as 987.5-900.5 MHz and 936.5-939.5 MHz.	Yes, both should be done and it is feasible. The number of incumbents in the international band 8 plan is very few, and concentrated in cities. Rural and remote operations will not interfere with them
Q41 ISED is seeking comments on its proposal to use the same methodology for determining geographic separation for broadband service as already included in SRSP-506 for land mobile systems.	This seems reasonable.
Q42 ISED is seeking comments on whether the 1.5 MHz and 500 kHz of separation are sufficient to protect the adjacent band Air-Ground Radiotelephone Service, fixed service and Narrowband Personal Communications Service.	No comment
Q43 ISED is seeking comments on the potential or actual benefits of subordinate licensing to increase rural broadband access and accommodating new innovative network usage.	CEA does not think optional subordination is a useful tool for improving rural and remote broadband. Subordinate mechanisms have been in place for over a decade with minimal results owing to the highly competitive nature of the telecommunications industry. Subordination is either mandatory, or it is ineffective.

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Q44 ISED is seeking comments on ways in which to streamline the general application requirements for subordinate licences as set out in sections 5.6.3 and annex D of CPC-2-1-23. ISED also seeks proposals to streamline the application process for all subordinate licence applicants, including those in commercial mobile bands who must also provide material addressing the criteria and considerations in section 5.6.4 of CPC-2-1-23. In these proposals, ISED also seeks comments as to how parties can demonstrate (e.g., an attestation, or other commitment) that their request for a subordinate licence does not constitute a transfer, deemed transfer, or prospective transfer as discussed in section 8.2.1 above.	No comment
Q45 ISED is seeking comments on facilitating subordinate licensing and encouraging secondary market transactions including: • Should additional changes be made to existing licences that will encourage the use of subordinate licences as a means to help deploy more services? • Given ISED's regulatory role, are there any issues or actions ISED should consider?	If ISED is willing to institute mandatory subordination, as it appears is proposed, then we ask how that is principally different than access licensing open to all bands? In general if one tool can be used to solve multiple problems, access licensing, then that should be favoured over greatly complexity.
Q46 ISED seeks comments on what additional information, if any, should be included in the draft form shown in annex D.	No comment
Q47 ISED is seeking comments on its proposal to remove the current restriction on database	CEA agrees

hosting in order to facilitate cloud-based database hosting solutions.	
Q48 ISED is seeking comments on its proposal to allow the use of TV channels 3 and 4 by all types of WSD.	CEA agrees
Q49 ISED is seeking comments on its proposal to no longer renew existing RRBS licences after March 31, 2027.	Yes, this seems reasonable given there has been a moratorium in place since 2014 and new technology is available.

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Comments submitted by the Canadian Federation of Agriculture on the 'Consultation on New Access Licensing Framework, Changes to Subordinate Licensing and White Space to Support Rural and Remote Deployment'

Emailed to: spectrumauctions-encheresduspectre@ised-isde.gc.ca

RE: Consultation on New Access Licensing Framework, Changes to Subordinate Licensing and White Space to Support Rural and Remote Deployment

Jobs and Growth in Canada's Agri-food Industry

The Canadian Federation of Agriculture (CFA) is Canada's largest general farm organization, representing approximately 200,000 farm families from coast to coast to coast through membership from provincial general farm organizations, as well as national and inter-provincial commodity organizations. The CFA's mission is to promote the interests of Canadian agriculture and agri-food producers, including farm families, through leadership at the national level and to ensure the continued development of a viable and vibrant agriculture and agri-food industry in Canada.

Canadian agriculture's potential as a driver of inclusive growth has been clearly identified by the Minister of Finance's Advisory Council on Economic Growth and reinforced through the work of the Agri-food Economic Strategy Table. The opportunity to increase Canadian agri-food exports and domestic sales holds significant potential to increase the sector's economic contributions beyond the $140 billion in GDP and 1 in 8 jobs that Canada's agri-food industry already provides each year. The agri-food industry is unique in its capacity to create jobs and produce prosperity in regions all across Canada, while contributing to Canadians' quality of life through access to affordable quality agri-food productions, ecological goods and services, and the vibrancy of rural communities across Canada.

The Importance of rural and remote spectrum deployment

The following submission highlights the importance of rural spectrum deployment and, more generally, access to affordable, reliable and modern digital connectivity for Canadian agriculture and the rural communities where much of the industry is located. The development and maintenance of any rural infrastructure and the provision of rural services are both critical to the vibrancy of rural communities and the farm businesses within them. At the same time, a successful and diverse agriculture industry is critical to the economic development of rural Canada.

Agriculture in the 21st century has evolved into a sophisticated, technology-intensive industry that must anticipate and respond to changing consumer demands both at home and abroad. Innovations in marketing, production, and product research are creating opportunities for producers to participate in both domestic and global marketplaces through online technologies, while online government services continue to evolve.

As noted by RBC, in its report entitled *Farmer 4.0: How the coming skills revolution can transform agriculture*, "A fourth agricultural revolution is underway, and Canada needs to seize it. The Internet

of Farming, powered by advanced technologies like autonomous tractors and drone-mounted sensors, is already transforming the way we produce food."[1]

This technology-driven fourth revolution, which has the potential to maintain Canadian agriculture's pre-eminence in productivity growth across Canadian industries, is reliant on the widespread adoption of precision agriculture and associated technologies. However, their emergence and importance to the sector has been limited by continued deficiencies in Canada's rural digital infrastructure connectivity, both in terms of connectivity to the farmgate and farm-field.

Access to broadband internet and mobile connectivity is an important lifestyle consideration for all Canadians, particularly young people, when considering where to live. For rural Canada to be attractive to future generations, access to reliable high-speed internet and widespread cellular coverage are critical.

CFA supports the Canadian Radio-television and Telecommunications Commission (CRTC)'s 2016 decision noting that broadband internet access is a basic telecommunications service for all Canadian. Despite this decision, CFA's members continue to highlight that producers across many rural and remote regions experisnece unreliable and insufficient broadband connectivity.

Recognizing that spectrum policy plays a critical role in support of digital connectivity in rural and remote areas, CFA welcomes the opportunity to provide comments with respect to the new access licensing framework, changes to subordinate licensing and white space to support rural and remote deployment. We believe the objective of this consultation, in looking to deploy unused spectrum is a critical direction that must be broadly adopted across all spectrum licenses if Canada is to achieve universal rural and remote connectivity at the pace required to leverage Canadian agriculture's potential.

Supporting rural and remote deployment through spectrum policy

Tier 5 Deployment Conditions

As stated previously, expediting access to affordable, reliable and modern broadband connectivity across rural Canada is of critical importance to Canadian agriculture. CFA believes this objective is best achieved through rapid deployment of spectrum across rural Canada in a fashion that is conducive to competition and a diversity of service providers. Implementing policies that facilitate the deployment of unused spectrum is a critical step in this regard and should be widely adopted to ensure efficient use of scarce licensed spectrum resources. The intent outlined in support of the proposed access licensing framework is of critical interest to CFA and its members.

CFA is not in a position to comment directly on the technical merits of each proposal within this consultation and their implications for rural deployment. The proposed licensing framework and the mechanisms that would enable it have ramifications for license holders and potential access licensees that extend beyond the direct range of CFA's interests and technical expertise.

However, having consulted broadly on this subject with telecommunications providers and across the agricultural industry, CFA believes the most expedient means of supporting rural broadband and the objectives of this consultation is the widespread implementation of more stringent deployment

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[1] RBC. *Farmer 4.0: How the coming skills revolution can transform agriculture*. Available online at: http://www.rbc.com/economics/economic-reports/pdf/other-reports/Farmer4_aug2019.pdf

conditions that explicitly target deployment in rural and remote Tier 5 service areas across all licensed spectrum (potentially including access licenses).

The recent introduction of Tier 5 service areas, at a smaller geographic scale, represents an important step towards enabling more geographically-sensitive deployment conditions for rural and remote areas. Deployment conditions based on population coverage within Tier 4 service areas do not sufficiently or efficiently drive rural deployment, as they inherently preference deployment in more geographically dense areas. Adopting deployment conditions for all license holders that assess the extent to which deployment has occurred within rural and remote Tier 5 services areas would incentivize rural deployment. These conditions should potentially consider a combination of population and area coverage to account for the unique challenges presented by low density service areas where a single variable may not sufficiently capture deployment activities.

Regardless of whether the proposed access licensing framework is adopted, such enhanced deployment conditions assessed at a Tier 5 scale would drive rural and remote deployment by license holders. Were access licenses to be adopted, these licenses should also be held to similar, if not more expedient, deployment conditions to ensure access licensees are similarly held accountable. Were the existing spectrum framework to otherwise remain, these more stringent deployment conditions would provide an immediate incentive for license holders to pursue subordinate licensing.

This would both expedite deployment into rural and remote areas, and create an environment conducive to a diversity of service providers responding to the diversity of rural and remote committee needs. In both instances, a more targeted incentive for rural and remote deployment would exist, while supporting increased competition.

ISED should also license more localized areas to support a diversity of uses, particularly in large geographic areas encompassing a number of smaller communities. If accompanied with corresponding deployment conditions targeting these more localized areas, such licenses would enable small service providers and businesses to deploy at scales that would otherwise discourage licensing spectrum.

Deployment Conditions – Additional considerations

CFA believes competition in rural service provision is critical, requiring a diversity of service providers operating at different scales to ensure efficient deployment and affordable services. While more localized deployment conditions present a clear incentive for rural and remote deployment, CFA recognizes that they make the prospect of investing in licenses potentially more challenging, particularly across larger service areas. The timelines and coverage conditions associated with more localized Tier 5 deployment conditions for rural and remote areas must look to balance these interests.

Timelines within these deployment conditions must maintain initial deployment requirements along population and geographic scales that are conducive to investment and deployment, while preventing speculation or maintenance of unused spectrum. A continuous, graduated deployment condition for license holders, across (i.e. across rural Tier 5 service areas within a larger license) and within rural and remote Tier 5 service areas, would potentially provide for this, with continued licence renewal predicated on further advances in rural and remote deployment. Under a proposed access licensing framework, access licensees should face similar renewal conditions.

The need for broader rural connectivity policy supports

In order to ensure more stringent deployment conditions are feasible for license holders, additional measures to are needed to account for low density, remote communities that do not otherwise present economically viable business cases for investment.

Spectrum policy is just one facet of a broad policy landscape that affects connectivity across rural and remote Canada. The following additional policy developments are needed to mobilize existing and future investments in connectivity to ensure they reach rural and remote communities and agricultural businesses in timelines that keep pace with technological advancements:

a) **Lower the threshold for eligible projects in federal connectivity funding** to ensure small service providers can access funding. Enabling the bundling of multiple projects in a single application is a critical step in this regard, as small service providers are essential in getting connectivity and competition to remote, rural locations.

b) **Re-establish a new CRTC High-Cost Service Area fund** ensuring that the formula allows for the creation of a sustainable business environment in rural areas. Current funding vehicles have proven difficult to access by smaller providers and communities and sustainable funding needs to be made available to those providers looking to operate in high cost, low density regions that would otherwise be economically infeasible.

c) **Establish and guarantee basic minimum standards for service and rates** by reviewing and improving the consumer complaints process and establishing basic minimum standards for service and rates.

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October 14, 2021

RE: Consultation on New Access Licensing Framework to Support Rural and Remote Deployment

Dear Ms. Davis,

The Canadian Horticultural Council (CHC) and Canadian Produce Marketing Association (CPMA) welcome the opportunity to provide feedback to Innovation, Science and Economic Development Canada (ISED) regarding the ongoing consultation on the proposed introduction of a new supplementary licensing process for unused spectrum.

Overview of Connectivity in the Fresh Produce Sector

Canada's fruit and vegetable supply chain is operating in a highly sophisticated and modern agricultural sector, of which Canadians can be proud. This has largely been driven by innovation and an incorporation of new technologies, which have collectively changed the way in which many think of producing food. These innovative practices ultimately aid decision making and risk management, allow primary producers to anticipate and respond to changing consumer demands, and ultimately optimize productivity and outputs.

Among the many ways in which our sector is embracing new technologies and modern practices are:

- Better data management to improve business practices and production outputs;
- Digitized food safety programs to ensure the quality and health of crops;
- More targeted emission reduction and carbon sequestration; and
- Monitoring of inputs and maximized efficiency of crop protection products.

Tools such as these are vital to the future success of the sector, and demonstrate how entrenched technological innovations have become at the primary production level. To make use of them, however, growers rely on access to reliable, predicable, and high-speed internet services. While maintaining access to high-speed internet is not a challenge for many Canadians, those living in rural communities (in which many of our farms and other businesses are located), face under-developed network infrastructure and overall poor coverage.

Many remain excluded from being able to take full advantage of technological advancements, and

embrace a more modern way of producing. This has resulted in the issue of rural broadband and connectivity becoming a far more pertinent and prioritized issue by the agriculture sector. Not only does access to affordable and reliable internet directly impede businesses from incorporating modern practices, but it is increasingly complicating the ability to attract a new generation of leaders into the sector who are far more adept and reliant on using technology.

Acknowledging that spectrum policy is an important piece of this challenge and poses a way to address the digital connectivity divide felt by rural and farming communities, we are hopeful that this consultation is the first step in ensuring better access for all Canadians.

Outcomes-Based Priorities of the Sector in Support of Rural Deployment

Our organizations strongly support the overall policy objectives ISED is seeking to address through this consultation. However, as representatives solely of end-users, our focus is more on ensuring outcomes-based policy initiatives that are supportive of rural deployment. As a result, we are unable to comment on the technical questions posed by ISED and the merits of each specific proposal.

In saying that, we do believe that spectrum policies should, in general, be predicated on the notion that those who possess band licenses should build and deploy reliable services. This consultation emphasizes the need to facilitate the deployment and timely availability of services across Canada (specifically in rural and remote regions) and to work towards addressing the connectivity gap affecting many of our members. Achieving this goal starts with a commitment to better foster investment in wireless networks and the development of innovative and emerging applications.

Specific to the framework being evaluated through this consultation, we also believe that the spectrum business model should prioritize the empowerment of those providers who are committed to deliver reliable internet services, including in rural Canada. Simply put, licenses should be made available to network builders who are ready and willing to deploy the spectrum. While we acknowledge there are complexities that come with infrastructure roll-out and building public networks, ensuring the commitment of license holders and providers to do so in a timely manner is critical. Otherwise, delays and challenges will persist, at the expense of those relying on these critical services.

The proposed access licensing framework appears to be a step in the right direction, and a potential mechanism through which those committed to building networks would be better positioned to move forward. This would better facilitate the deployment and availability of reliable services in communities that currently lack them, many of which are located in rural Canada. It is also believed that the proposed process would foster greater development of the marketplace, driving consumer choice and an ability to access more competitive prices.

Strengthening Deployment Terms and Conditions

In addition to the access licensing framework, we also believe that a critical component of strengthening Canada's rural internet deployment is addressing the composition of deployment terms currently associated with spectrum licenses.

The recent introduction of Tier 5 service areas does begin to address the geographic considerations of deployment in rural areas and seeks to ensure that not only larger population centres receive coverage. However, in practice, the current criteria associated with these conditions insufficiently address the prescribed outcomes.

Our organizations recommended that more targeted conditions should be imposed to more effectively achieve the prescribed outcomes. In particular, ISED should impose more stringent and targeted deployment conditions to encourage license holders to more rapidly deploy services and ensure the equitable distribution of connectivity to consumers in the given area. We are also supportive of the concept of such deployment requirements being an eligibility criterion for the renewal of existing licenses.

Moving towards increased deployment conditions is expected to result in one of two outcomes:

- Primary license holders will develop services more efficiently in an area covered by their license. If there are prescribed deployment requirements they must fulfill to maintain ownership of that license, they will be incentivized to do so.
- Alternatively, more stringent conditions will encourage primary license holders to pursue subordinate agreements with regional providers. In many cases, these providers may be better suited to deliver service at a fast pace, and will be able to enter into an agreement to do so. This will have the additional benefit of promoting competition in the marketplace and allowing smaller providers to continue providing service in their communities.

Concluding Thoughts

Our organizations strongly believe that every Canadian has a reasonable expectation, and right, to reliable internet access. While this is already a reality for those living in urban centers, many rural communities are still waiting for better connection. This has become even more evident during the pandemic, as the connectivity divide has complicated access to tele-medicine, the capacity for at-home education, and the ability to navigate government services.

The Government of Canada has a responsibility to ensure that spectrum and rural broadband deployment supports all communities and allows our sector to continue innovating and modernizing production. By increasing overall access to spectrum, as well as working to target undeployed and undeveloped spectrum with expired license terms, ISED can better leverage these under-utilized resources and enable providers to deliver more reliable services across Canada.

Thank you again for the opportunity to provide input on the proposed licensing process. We appreciate your consideration of our comments and would be pleased to answer any questions you may have.

Should you have any questions, or require any additional information, please do not hesitate to contact Jordan Boswell at jboswell@hortcouncil.ca or Jane Proctor at jproctor@cpma.ca.

About the Canadian Horticultural Council

The Canadian Horticultural Council (CHC) is an Ottawa-based voluntary, not-for-profit, national association that represents fruit and vegetable growers across Canada. These growers are involved in the production of over 120 different types of crops, with farm cash receipts of $5.4 billion in 2019. Since 1922, in collaboration with members and the government, CHC has advocated on important issues to ensure a viable future for Canada's fruit and vegetable sector.

About the Canadian Produce Marketing Association

Based in Ottawa, the Canadian Produce Marketing Association (CPMA) is a not-for-profit organization representing companies active in the marketing of fresh fruit and vegetables in Canada, from the farm gate to the dinner plate, spanning the entire produce industry. The Association's members include major growers, shippers, packers, and marketers; importers and exporters; transportation and logistics firms; brokers, distributors, and wholesalers, retailers, and foodservice distributors; and fresh cut operators and processors. Founded in 1925, CPMA is proud to represent domestic and international members who are responsible for 90% of fresh fruit and vegetable sales in Canada, making significant contributions not only to our economy, but to the health and well-being of Canadians.

BEFORE INNOVATION, SCIENCE, AND ECONOMIC DEVELOPMENT CANADA

IN THE MATTER OF

CONSULTATION ON NEW ACCESS LICENSING FRAMEWORK, CHANGES TO SUBORDINATE LICENSING AND WHITE SPACE TO SUPPORT RURAL AND REMOTE DEPLOYMENT, AUGUST 2021

COMMENTS OF THE
CANADIAN ASSOCIATION OF WIRELESS INTERNET SERVICE PROVIDERS

26 OCTOBER 2021

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1.0   INTRODUCTION

1.   Canadian Association of Wireless Internet Providers ("CanWISP") represents the interests of Canadian Wireless Internet Service Providers ("WISPs"), which provide fixed-wireless Internet access to households and business across Canada on networks that they build, operate and maintain. Our members operate and invest in the predominantly rural communities they serve while also employing residents of those same communities.

2.   Our activities to promote the interests of WISPs include participation in legislative, regulatory and policy development processes. CanWISP is especially interested in ensuring that spectrum, which is a public resource, is used as efficiently as possible to the ultimate benefit of Canadians.

3.   CanWISP supports the proposed access licensing framework. We applaud ISED for demonstrating an understanding of the message expressed by groups like CanWISP on behalf of rural consumers, that increased spectrum access in rural and remote communities is a powerful tool to address the digital divide.

4.   As ISED has correctly observed, making unused spectrum available to local service providers will:

- facilitate the deployment and timely availability of services across the country, with an emphasis on rural and remote regions;

- foster investment and the evolution of wireless networks by enabling the development of innovative and emerging applications; and

- support sustained competition in the provision of wireless services so that consumers and businesses benefit from greater choice and competitive prices.[1]

5.   CanWISP members are highly motivated to expand services and enhance connectivity in underserved areas, and to bring broadband services and enhanced competitive choices to consumers across Canada. The proposed access licensing framework has the potential to foster new and significant infrastructure investment in rural communities.

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[1]   Innovation, Science and Economic Development Canada, Spectrum Management and Telecommunciations, "Consultation on New Access Licensing Framework, Changes to Subordinate Licensing and White Space to Support Rural and Remote Deployment", SLPB-004-21, August 2021 ["SLPB-004-21"], at para. 12.

6.   ISED has recently decided to make spectrum available in the unlicensed 6 GHz band and the lightly-licensed 3900-3980 MHz band. This spectrum will support the operations of WISPs, it will not provide certainty of interference-free operation, or the ability to deploy using power levels that will support ubiquitous coverage. Access to licensed bands will enable rural operators to make significant investments into network infrastructure that will serve communities for many years. The ISED is correct in recognizing the importance of access to licensed bands in this consultation.

7.   Licensees who have held licences for over ten years ago (38 years for cellular and 26 years for PCS) have had ample time to deploy stations throughout their intended service area. These operators have neglected to invest in rural and remote communities because these communities have not been prioritized. Operators who are ready to deploy and launch services in un-served and under-served communities in the short term should be given priority access to these Tier 5 block pairs. There is no reasonable justification to withhold or delay these operators' access to spectrum.

8.   The absence of deployments in rural and remote Tier 5 areas demonstrates that these licence areas, which are bundled with licence areas that contain large population centres, are of little to no value to the primary licence holders. The proposed access licensing framework does not reduce the value of the underlying primary licences at all.

9.   CanWISP believes that low deployment requirements, together with large licensing areas, have fed into the imbalance of spectrum utilization, leaving rural areas with low levels of spectrum usage while investment is concentrated in urban centres. Introducing more stringent deployment requirements will incentivize more investment in rural communities, both from primary licensees, and by encouraging voluntary subordinate licensing agreements. The proposed access licensing framework would promote this highly desirable outcome.

10.   The balance of these comments addresses the 49 questions set out in SLPB-004-21.

2.0   ACCESS LICENSING FRAMEWORK

Question 1
ISED is seeking comments on its proposal to implement a new Access Licensing framework to make licences available in rural and remote areas where there is unused spectrum.

11.   CanWISP strongly supports the proposal to implement the Access Licensing Framework.

12. With access to licensed spectrum and an associated equipment ecosystem, local and regional service providers will be able to build fixed and mobile networks in areas where Canada's mobile carriers have not invested.

13. Across many of our members' service regions, the past decade has seen very limited expansion of consumer choice for mobile wireless services, despite the presence of new entrants in Canada's largest markets. In many of these same service regions, consumers lack access to 50/10 broadband services. With many spectrum licences un-deployed in rural communities, there is ample opportunity for enhanced competition and improved broadband availability if local and regional operators have the means to invest. Access to spectrum is necessary to enable this investment.

14. The proposed policy will foster increased investment in rural communities and the efficient use of scarce spectrum resources. By providing access to spectrum with expired initial licence terms, and by limiting access to Tier 5 remote and rural areas where no deployment has taken place, ISED is not compromising the ability of primary spectrum licence holders to deploy freely.

15. The proposed framework should also be extended to licences where the licence term is longer than ten years, but where the first ten years of the licence term has passed. In rural and remote areas where consumers have not benefitted from spectrum following ten years of opportunity for the primary licensee, the spectrum should be made available to other operators who are prepared to deploy.

16. The proposed policy should be implemented with straightforward criteria (i.e. based on un-deployed licences) and very limited recourse for primary spectrum holders to block the access licensing. These spectrum holders have had many years in which to deploy. Access licensees who are ready to deploy should be granted access licences immediately upon application. Proposals that will delay or complicate the granting of access licences will create significant barriers to the use of this spectrum.

Question 2
ISED is seeking comments on its proposal to issue access spectrum licences and access radio licences on a first-come, first-served basis

17.   CanWISP agrees that first-come first-served is the best mechanism to allocate access licences. As recognized by ISED, this approach can minimize administrative burden and make spectrum available for use in a timely fashion.[2] We also agree with ISED's assessment[3] that demand is unlikely to exceed supply for these licences.

Question 3
ISED is seeking comments on its proposal to use the rural and remote Tier 5 service areas as the basis to determine the rural and remote areas in which it will apply access licensing

18.   CanWISP agrees with ISED's proposal to use rural and remote Tier 5 areas for access licensing. This approach is fully consistent with the intent of the access licensing framework, which is to support the availability of <u>rural</u> services.[4]

19.   By limiting this framework to areas that are rural and remote, ISED also ensures that investment and service levels in metropolitan and urban licence areas, where demand for licences and deployment levels are high, are not adversely affected by access licensing.

Question 4
ISED is seeking comments on its proposed principles to be used when considering spectrum licensed or radio licensed bands where the proposed Access Licensing framework will apply.

20.   CanWISP agrees that appropriate bands for access licensing would meet the following criteria:

- the potential to support wireless broadband, private networks, and/or industry vertical use cases;

- an existing licensing framework for flexible or mobile use;

- an available or clear path to an available equipment ecosystem;

- sufficient amounts of unused spectrum in rural and remote areas.[5]

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2   SLPB-004-21, at para. 32.
3   *Id.,* at para. 31
4   *Id.,* at para 1.
5   *Id.,* at para. 37

21.   Bands with adequate spectrum, equipment available, and a clear licensing framework will be of commercial interest to both ISPs and private network operators.

22.   CanWISP notes that "the potential for coexistence between existing users and potential access licensees"[6] applies to all commercial mobile and fixed access frequency bands. ISED's technical requirements for equipment and co-ordination facilitate coexistence. Users of adjacent bands in the same area, and users of the same band in adjacent areas, currently coexist in urban environments. There is no reason to suggest that coexistence is not viable in rural and remote areas for any commercial mobile or fixed bands.

23.   CanWISP further agrees that primary licensees should be allowed adequate time to deploy, and that the initial licence term, or initial deployment requirement term (whichever comes first) is an appropriate amount of time.

24.   CanWISP wishes to propose one additional principle for identifying bands for access licensing. We propose an advance period of one year during which set-aside spectrum becomes available via access licensing before the licensee has a right to transfer to set-aside-ineligible carriers. Adding this requirement would promote spectrum access by smaller carriers.

Question 5
ISED is seeking comments on other principles it should take into account when considering bands where the proposed Access Licensing framework will apply.

25.   CanWISP's only proposed additional criteria is the one-year advance availability of set-aside spectrum before it is eligible for transfer to non-set-aside eligible carriers. No further criteria should be added. The listed set of criteria, with the additional requirement proposed by CanWISP's will ensure more efficient use of all bands to serve Canadian consumers in rural and remote areas. ISED should not impose further limits on additional bands that could be made available for access licensing.

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[6]   *Ibid.*

3.0 PROCESS FOR ACCESS SPECTRUM LICENCES

Question 6
ISED is seeking comments on adopting a flexible use licensing model for fixed and mobile services when issuing access spectrum licences

26. CanWISP agrees with this proposal. Flexible use licences will enable the most efficient use of this spectrum by allowing operators to supply the services (fixed or mobile) demanded by consumers in each area.

Question 7
ISED is seeking comments on its proposal to use Tier 5 service areas for the proposed access spectrum licences and any associated potential technical challenges should this process be applied to all commercial mobile or flexible use frequency bands.

27. CanWISP broadly agrees with ISED's proposal to use Tier 5 areas for access licensing.

28. The propagation characteristics of lower frequency bands do not present unreasonable technical challenges to licensing Tier 5 areas. ISED's technical standards enable coexistence of various operators, and operators successfully coexist in many urban environments and near service area boundaries.

29. By licensing an entire Tier 5 area, ISED provides access licensees with the business certainty that is required to justify an investment in network infrastructure.

30. CanWISP notes that some of these areas, particularly more northern areas, are quite large and encompass a number of small communities. A local carrier may wish to offer service in a very small community but not the larger community in the service area. A deployment obligation associated with the larger Tier 5 area might discourage a very small deployment in such a community. This will be a particular concern for any deployments targeting remote first nations communities. For these reasons, ISED should allow access licences for subdivided portions of Tier 5 licenses. The ability to subdivide spectrum licences greatly increases overall licensing and spectrum use efficiency. Furthermore, ISED has a longstanding practice of allowing carriers to subdivide and subordinate spectrum licenses for licences at the Tier 4 level or higher. Therefore, expanding this practice for Tier 5 licences will not create a significant additional administrative burden on ISED's resources.

Question 8
ISED is seeking comments on any future adjustments to the licence areas for access spectrum licences, including consideration of more localized areas (e.g. smaller than Tier 5).

31.   As discussed above, ISED should license sub-divided Tier 5 areas upon request by an applicant. This is especially important in cases where the Tier 5 area is geographically large and encompasses several small communities.

32.   In the case of operators building private networks in areas far from any community, a deployment requirement would discourage the use of spectrum access licences, since those operators do not serve the general public. However, allowing subdivision of Tier 5 spectrum licences would encourage such deployments.

Question 9
ISED is seeking comments on its proposed process for identifying rural and remote Tier 5 service areas in which there is unused spectrum that would be made available for access spectrum licensing.

33.   CanWISP agrees that the deployment information in the Spectrum Management System (SMS) is the best source to use to determine the presence of a deployment in a particular block and Tier 5 pair. Block and Tier 5 pairs with no deployment should be made available for spectrum access licensing.

34.   ISED should provide a mechanism for access licence applicants to challenge the use of a Tier 5 spectrum block pair, where a very small deployment (1 or 2 sites) is shown in SMS but no active service offering is apparent in the Tier 5 area.

Question 10
ISED is seeking comments on its proposal to impose a condition of licence to prohibit existing primary and subordinate licensees' deployment in areas for which an access spectrum licence has been issued.

35.   CanWISP strongly agrees with this proposal. By ensuring that the access licence is an exclusive spectrum licence, ISED will provide access licensees with the business certainty needed to invest in network infrastructure.

Question 11
ISED is seeking comments on its proposal that stations already deployed by primary or subordinate spectrum licensees within their service areas would be protected from subsequent deployment under access spectrum licences.

36.   CanWISP agrees with this proposal.

37.   CanWISP is concerned, however, that primary licensees may use spurious claims of interference in order to curtail access licensees' deployments. ISED should provide a streamlined and accessible dispute resolution process in the case that an access licensee wishes to dispute a primary or subordinate licensee's claim of interference.

Question 12
ISED is seeking comments on the above options for eligibility.

38.   CanWISP strongly supports Option 1, that is, in order to be eligible, an applicant must not hold any un-deployed spectrum licences in the subject Tier 5 area. We are proposing a further modification to Option 1 in our response to Question 13 below.

39.   The eligibility criteria described in Option 1 ensures that access licences will be used only where these licences are necessary to provide new or improved services.

40.   CanWISP does not support Option 2 (i.e., in order to be eligible, an applicant must not hold any spectrum licences in the subject Tier 5 area). This would preclude existing operators with 3.65 GHz or 3.8 GHz licences, or with small quantities of spectrum licences won at auction, from expanding their service offerings using spectrum access licences.

41.   Option 2 would have the inappropriate consequence of enabling new entrants to launch services while preventing existing WISPs from expanding their existing licence-based services.

Question 13
ISED is seeking comments for Option 1 and Option 2, specifically should the deployed and/or undeployed spectrum be based on any frequency band (e.g. 2500 MHz) currently held by the applicant or only the band (e.g. PCS band) for which the application is made?

42.   ISED should implement Option 1 with a qualification that eligibility should be contingent on not having un-deployed spectrum in the same spectrum band group (i.e., low-band, mid-band, high-band, millimetre wave).

43.   Different portions of spectrum are appropriate for different applications. For example, an applicant may hold un-deployed high-band spectrum in a particular Tier 5 area, but wish to deploy services, such as fixed wireless service in a heavily treed area over long distances, that require low-band spectrum. Conversely, an applicant may hold un-deployed low-band spectrum but wish to deploy services, such as high-capacity short-range services at an industrial site or in a small town centre, that are better suited to high-band or millimeter-wave spectrum.

44.   By grouping licensed bands together into spectrum band groups for the purpose of eligibility, ISED can ensure that the spectrum is used efficiently to serve all regions of Canada.

Question 14
ISED is seeking comments on its proposal to issue access spectrum licences with a three-year licence term and the proposed wording of the condition of licence above.

45.   The proposed three-year licence term does not provide an adequate level of business certainty to support investment into network infrastructure. CanWISP proposes that ISED adopt a ten-year licence term.

46.   In the past several years, ISED has repurposed several frequency bands despite licensees having a high expectation of renewal. While this repurposing may support the advancement of Canada's telecommunications networks, it has severely undermined the confidence of businesses, in particular, that of regional operators. These operators have been heavily impacted by the re-purposing of the various 3 GHz bands (in particular the 3650-3700 MHz band) and will be reluctant to invest in infrastructure that is dependent upon licences with terms that are shorter than ten years.

Question 15
ISED is seeking comments on its proposal that access spectrum licences not contain transfer, subdivision or subordination privileges.

47.   The proposed prohibition on the transfer of access spectrum licences will discourage the use of access licensing, will inhibit investment into network infrastructure in rural communities, and will reduce the benefits that access licensing will bring to rural consumers.

48.   With the proposed prohibition on the transfer of access licences, an operator that builds a network serving a rural community using access licences is effectively unable to change the ownership structure of its company, for example through a sale of the company or the portion of the operations that includes the network built using access licences. A prohibition on the transfer

of spectrum access licences could have the perverse result of causing a loss of service in rural communities.

49.   As described in our response to Question 7 above, ISED should issue access licences for subdivided portions of Tier 5 service areas. With this provision in place, applicants may request licences for only the areas they intend to serve. This will enable deployments in, for example, very small First Nations communities or industrial sites.

50.   With the availability of subdivided portions of Tier 5 areas through this framework, CanWISP agrees that there is no need for access licences to be further subdividable or eligible for subordination.

51.   Access licences should be transferable if the licensee has met the deployment requirements and the licence is being used to provide connectivity service to consumers.

Question 16
ISED is seeking comments on its proposal to align the deployment conditions for access spectrum licences with the relevant conditions of licence currently applied to the licences in the specific band, taking into account any differing characteristics such as Tier sizes, and the timing as to when those deployment requirements should apply. ISED is also seeking comments on the appropriateness of existing deployment requirements for private networks.

ISED will consider alternative proposals for the deployment requirements for access spectrum licences. Such proposals should contain a rationale and discussion of their implications for ISED's policy objectives.

52.   CanWISP proposes that ISED align the deployment conditions for access spectrum licences with those of the existing licences in the specific band, with the addition of a short-term deployment requirement.

53.   It is reasonable to expect an access licensee to deploy equipment within two years of obtaining the access licence. Adding a short-term deployment requirement that a deployment must be complete within two years of licence award will discourage speculative licensing through this framework.

54.   CanWISP anticipates that many deployments using access licences will be funded through broadband grant programs. Existing funding programs operate using a cycle of application, award, and funding that extends to two-year timeframes. Given these timelines, it is not reasonable to require a licensee to deploy equipment in less than two years.

55.   We note further that obtaining approval for the construction of new tower sites may also take a similar amount of time.

56.   With the addition of a short-term deployment requirement, ISED's proposed alignment of deployment conditions with the relevant conditions of licence currently applied to the licences in the specific band, adjusted based on population and date of issue, is appropriate.

57.   CanWISP further notes that private networks are not able to meet deployment requirements, since they do not serve the general population. Private deployments are therefore limited either to areas with zero population, or to systems that use access radio licences. The ability of a licensee to sub-divide Tier 5 areas will permit private network operators to licence only their target areas, with zero population.

Question 17
ISED is seeking comments on its proposal to apply the conditions of licence set out in annex B to access spectrum licences issued through the proposed Access Licensing framework.

58.   With the exception of specific items B2 (licence term), B3 (transfer and divisions), and B4 (deployment requirements) to which we are proposing certain modifications as outlined in the preceding sections, CanWISP supports the remainder of the conditions of licence set out in annex B to this consultation.

59.   CanWISP notes that requiring compliance with reporting and technical requirements will support frequency co-ordination between operators.

Question 18
ISED is seeking comments on its proposal to make 800 MHz cellular available for access spectrum licenses in rural and remote Tier 5 service areas in which the existing primary or subordinate has no deployment.

60.   CanWISP strongly supports ISED's proposal to make 800 MHz cellular spectrum available through the access licensing framework.

61.   As ISED highlights, this spectrum has been licensed since 1983. If a licence-holder has not chosen to invest in a community after 38 years, it is long past time for other operators to have the opportunity to deploy in this spectrum.

Question 19

ISED is seeking comments on its proposal to modify the CTFA, where relevant, to change the existing fixed service allocation to primary status in the 824-849 MHz/869-894 MHz range, noting that the fixed service is already allocated on a primary basis in the 890-894 MHz portion.

62.   CanWISP supports the proposed modification. This spectrum would be suitable for both fixed and mobile offerings in rural communities.

Question 20

ISED is seeking comments on its proposal to make PCS blocks A to F available for access spectrum licenses in rural and remote Tier 5 service areas in which the existing primary or subordinate licensee has no deployment.

63.   CanWISP strongly supports ISED's proposal to make PCS blocks A to F available through the access licensing framework.

64.   This spectrum has been licensed since 1995. If a licence-holder has not chosen to invest in a community after 26 years, it is long past time for other operators to have the opportunity to deploy in this spectrum.

Question 21

ISED is seeking comments on any other spectrum licence bands that meet the principles proposed in section 5 that could be considered for access spectrum licensing.

65.   CanWISP proposes that the AWS-1 band be made available for access spectrum licensing. This band was auctioned in 2008, with 10-year licence terms. This spectrum constitutes 90 MHz, from 1710-1755 MHz and 2110-2155 MHz. Now that these initial licence terms have expired, the AWS-1 spectrum should be made available through the access licensing framework.

66.   The PCS expansion band (block G, 1910-1915 and 1990-1995 MHz) that was auctioned along with the AWS-1 band should also be made available through the access licensing framework. This block is adjacent to PCS block F and complements the proposed PCS spectrum access licence.

Question 22
ISED is seeking comments on the proposal to generally adopt the same technical requirements, including coordination requirements, as published in RSS-132 and SRSP-503 in the cellular band, and RSS-133 and SRSP-510 in the PCS band for future access spectrum licences.

67.   CanWISP supports the adoption of the same technical requirements that currently apply in these bands. The current equipment ecosystems are built to meet these standards, and these standards promote the coexistence of operators.

Question 23
ISED is seeking comments on the above proposal to amend the Condition of Licence concerning "International and Domestic Coordination" for all existing spectrum licensees in blocks A and B of the cellular band and blocks A through F, inclusively, of the PCS band.

For reference, the proposed text is:

"This licence is subject to licensing by access spectrum licensees in accordance with the Access Licensing framework. Where an access spectrum licence has been issued, the licensee may only deploy in the area licensed to an access spectrum licensee where the licensee and the access spectrum licensee have entered into a coordination agreement."

68.   CanWISP supports the proposed amendment to the Condition of Licence concerning International and Domestic Coordination. This amendment will support the introduction of the access licensing framework, which CanWISP strongly endorses.

Question 24
ISED is seeking comments on its proposal that existing cellular and PCS stations under spectrum licences will be protected from access spectrum licence operations and would not be required to coordinate with new access spectrum licence operations in adjacent service areas.

69.   CanWISP broadly agrees with this proposal. Please refer to our comments in response to Question 11.

Question 25
ISED is seeking comments on its proposal that any future stations deployed by existing cellular and PCS spectrum licensees would be subject to the coordination rules in SRSP-503 and SRSP-510 applied at the new Tier 5 service area boundary where an access spectrum licence has been issued.

70.   CanWISP agrees with this proposal. This requirement would permit the ongoing coexistence of primary licensees and access licensees on fair terms.

Question 26
ISED is seeking comments on its proposal that existing radio licensees operating standard systems in the PCS band would be protected from access spectrum operations and access spectrum licensees may not trigger displacement of existing radio licences in the PCS band.

71.   CanWISP agrees with this proposal. This requirement would ensure that existing services are not disrupted.

Question 27
ISED is seeking comments on the process for making access spectrum licences available and the options described above.

72.   CanWISP supports option 1 – that ISED use the standard licensing application process but with a lengthened processing time commitment of 126 calendar days.

73.   CanWISP anticipates that applications for spectrum access licences will be submitted at a moderate pace but recognizes ISED's concern that a large number of applications would prevent ISED from processing these applications in the normal 28 calendar day timeframe.

74.   CanWISP does not support option 2 (that ISED make spectrum access licences available by tranches of Tier 5 blocks). CanWISP believes that the market will best determine which licences should be released first.

75.   CanWISP notes that an application for several contiguous spectrum blocks in a single Tier 5 service area should be considered one application, not multiple separate applications. Also, an application for the same spectrum block(s) in two adjacent Tier 5 service areas should be considered one application, not two separate applications, where the two service areas will together support a single community / network.

76.   CanWISP encourages ISED to prioritize serving a diversity of applicants when processing applications. That is to say, if a single applicant submits numerous applications, the processing of those applications should not hinder the processing of applications from other applicants. CanWISP proposes that ISED process applications according to a queue where applications are generally processed in order of submission, however, if one applicant submits multiple applications, then those applications will processed consecutively, but also interleaved with other applications (if other applications are also in the queue).

Question 28
Under both options, ISED is seeking comments on its proposal to begin access spectrum licensing three months after the publication of the decision.

77.   CanWISP strongly supports ISED's proposal to begin access spectrum licensing as soon as possible following the publication of the decision. This is necessary for Canada to accelerate the pace at which it is closing the digital divide.

Question 29
Under both options, ISED is seeking comments on its proposals to limit the number of access spectrum licence applications to:

- *Option 1: 20 per applicant per 12 month period*

- *Option 2: 5 per applicant at the opening of the access licensing process for each tranche*

78.   CanWISP supports ISED's proposed limitation on the number of applications that may be submitted. CanWISP does not anticipate that its members or other carriers will be interested in applying for more than 20 licences in a year, provided that an application for contiguous blocks in a single Tier 5 area, or applications for the same blocks in adjacent Tier 5 areas, are treated as a single application.

79.   As described in our response to Question 27, CanWISP is proposing that ISED consider applications for adjacent spectrum blocks in one Tier 5 area, or applications for the same spectrum block(s) in two adjacent Tier 5 areas that encompass a single deployment, to be one single application.

Question 30
Under Option 2, ISED is seeking proposals on how it should prioritize Tier 5 licence areas and spectrum blocks if it adopts a sequential release of spectrum for access spectrum licensing. Proposals should address the key considerations of equitable geographic distribution, coverage, impacts on existing licensees, potential business cases, and timeliness.

80.   We reiterate our support for option 1.

81.   With option 2, there is an opportunity for corporations or various levels of government to influence which areas are released first for access spectrum licensing, which may actually impede

deployments by carriers that are ready to do so. With option 1, operators' readiness to deploy determines which service areas are licensed first.

82.   Nonetheless, if ISED chooses option 2, service areas should be selected for release based on releasing an equal number of Tier 5 areas for each Tier 3 service area, and releasing service areas with higher populations first.

4.0   PROCESS FOR ACCESS RADIO LICENCES

Question 31
ISED is seeking comments on its proposal to issue site-specific access radio licences within rural and remote Tier 5 service areas under the Access Licensing framework.

83.   CanWISP supports ISED's proposal for an access radio licensing framework.

84.   CanWISP concurs with ISED's assessment that the 900 MHz LMR band is of limited use for providing broadband connectivity to consumers, but that this band may be useful for certain deployments and certain private network uses.

85.   CanWISP also notes that private network operators wishing to use the cellular or PCS bands may be better served by the access radio licensing framework than by the access spectrum licensing framework, since private networks are generally more limited in geographic scope.

Question 32
ISED is seeking comments on its proposal to follow its LMR licensing process to receive and review applications for access radio licences.

86.   CanWISP supports the proposal to follow the existing LMR licensing process for access radio licensing. Using the existing process will simplify the application and approval process.

Question 33
ISED is seeking comments on its proposal not to limit the number of access radio licence applications an applicant may submit via the Spectrum Management System for these bands.

87.   CanWISP proposes that ISED apply a limit of 20 applications per 12-month period to radio access licences, as with spectrum access licences. CanWISP does not anticipate an excessive number of applications for these licences, but nonetheless a limit to prevent excessive applications should be in place.

88.   An application for several contiguous blocks in one Tier 5 area, or an application for the same spectrum block in adjacent Tier 5 areas, should be considered as one single application.

Question 34
ISED is seeking comments on potential eligibility restrictions for access radio licences.

89.   Access radio licence should be available to both radiocommunication users (who deploy private networks for their own purposes) and radiocommunication service providers (who deploy networks for both consumers and for private customers).

90.   By including service providers in the eligibility criteria, ISED will permit service providers to build and operate private networks on behalf of end users who do not wish to operate their own private networks.

91.   CanWISP supports ISED's proposal to limit eligibility to users or service providers who present to ISED a plan for a specific private network or a specific network that demonstrates a clear benefit to the community it serves.

Question 35
ISED is seeking comments on its proposal to apply the above conditions of licence to access radio licences.

92.   CanWISP supports ISED's proposal that radio access licensees be required to present, upon request, technical system information to ISED. This requirement would facilitate ISED's ability to address interference concerns without imposing an unreasonable burden on licensees.

Question 36
ISED is seeking comments on its proposal to allow broadband use in the 900 MHz LMR band as shown in figure 6.

93.   CanWISP supports ISED's proposal to make the 900 MHz LMR band available through the radio access licensing framework.

94.   CanWISP agrees with ISED's assessment that, while this band is of limited use in providing 50/10 broadband connections to the public, it may have applications in private networks.

Question 37
ISED is seeking comments on its proposal to issue access radio licenses in the 897.5-900.5 MHz and 936.5-939.5 MHz portions of the 900 MHz LMR band in rural and remote Tier 5

service areas and only in locations within those service areas where there will be no interference to existing LMR operations.

95.   CanWISP supports the proposal to make the 900 MHz LMR band available only in rural and remote Tier 5 areas, and only in locations where there will be no interference to existing systems. This proposal would provide the opportunity for innovation at remote sites without harming existing systems, and without infringing on the full use of the 900 MHz LMR band in high-demand areas.

Question 38
ISED is seeking comments on availability of equipment for the proposed broadband service, including the feasibility of modifying 3GPP band 8 equipment.

96.   CanWISP has no specific comment on the availability of equipment for this band. In general, we note that equipment manufacturers do not generally support band designations that are unique to Canada.

Question 39
ISED is seeking comments on the potential use cases of 3/3 MHz for broadband services, including the potential for 5G deployment.

97.   CanWISP agrees with ISED's assessment that, while this band is of limited use in providing 50/10 broadband connections to the public, it may have applications in private networks.

98.   ISED should be open to considering innovative uses of this band to support industrial operations or consumer networks. For example, this band might be used to provide a secure and isolated control and monitoring channel for commercial networks, to control unmanned aerial or terrestrial vehicles at remote industrial sites, or to provide operational support to emergency response teams.

Question 40
ISED is seeking comments on the feasibility of also making 896-901 MHz and 941-946 MHz available for broadband at the same time as 987.5-900.5 MHz and 936.5-939.5 MHz.

99.   CanWISP supports ISED's proposal to make more spectrum available where possible. The expanded availability of radio licences will promote innovation and the efficient use of spectrum.

Question 41
ISED is seeking comments on its proposal to use the same methodology for determining geographic separation for broadband service as already included in SRSP-506 for land mobile systems.

100.   CanWISP supports the use of existing technical standards with the new access radio licensing framework. This requirement will support the coexistence of different systems.

Question 42
ISED is seeking comments on whether the 1.5 MHz and 500 kHz of separation are sufficient to protect the adjacent band Air-Ground Radiotelephone Service, fixed service and Narrowband Personal Communications Service.

101.   CanWISP has no comment on this question.

5.0   SUBORDINATE LICENSING

Question 43
ISED is seeking comments on the potential or actual benefits of subordinate licensing to increase rural broadband access and accommodating new innovative network usage.

102.   CanWISP concurs with ISED's assessment that a dynamic secondary market for spectrum improves the overall competitiveness of Canada's telecommunications market, that facilitating access to subordinated spectrum lowers an important barrier to entry into the market.

103.   Voluntary subordinate licensing agreements will only arise where the cost of obtaining a subordinate licence is low enough to support a business plan by the subordinate licensee (if it has to pay for the subordinate licence), and high enough to provide sufficient incentive for the primary licensee.

104.   CanWISP believes that existing licence holders, particularly large national mobile service providers, have little incentive to enter into subordinate agreements with those seeking access to spectrum; that is, the cost that supports a business plan is not high enough to incentivize the primary licensee.

105.   If regional carriers were more successful with sub-licensing spectrum from primary licensees, regional carriers would invest more in building networks that bring 50/10 broadband services to households in rural communities.

106.   The existence of the access licensing framework may motivate primary licence holders to enter into subordinate licence agreements with regional operators.

107.   In the absence of a functioning secondary market in rural and remote areas where the price of subordinate licensing is neither low enough to support a subordinate licensee's business model (if it has to pay for a subordinate licence), nor high enough to incentivize the primary licensee, the proposed access licensing framework provides a mechanism for rural operators to deploy networks.

> **Question 44**
> *ISED is seeking comments on ways in which to streamline the general application requirements for subordinate licences as set out in sections 5.6.3 and annex D of CPC-2-1-23. ISED also seeks proposals to streamline the application process for all subordinate licence applicants, including those in commercial mobile bands who must also provide material addressing the criteria and considerations in section 5.6.4 of CPC-2-1-23. In these proposals, ISED also seeks comments as to how parties can demonstrate (e.g., an attestation, or other commitment) that their request for a subordinate licence does not constitute a transfer, deemed transfer, or prospective transfer as discussed in section 8.2.1 above.*

108.   The existing subordinate licensing process has not presented a challenge to those CanWISP members who have successfully entered into subordinate licence agreements.

109.   If ISED finds that some subordination requests include incomplete information, or are not appropriate uses of licence subordination, then further guidance could be issued.

> **Question 45**
> *ISED is seeking comments on facilitating subordinate licensing and encouraging secondary market transactions including:*
>
> - *Should additional changes be made to existing licences that will encourage the use of subordinate licences as a means to help deploy more services?*
>
> - *Given ISED's regulatory role, are there any issues or actions ISED should consider?*

110.   CanWISP believes that the introduction of the access licensing framework will encourage more primary licensees to engage in subordinate licensing negotiations with regional wireless operators.

111.   However, the proposed framework will not assist numerous under-served communities and households within Tier 5 areas that have minimal deployments in either a single population centre

or along a highway corridor. ISED's National Broadband Map[7] can be used to identify areas where 50/10 broadband service is not available, and many of these areas fall within Tier 5 areas that will not be available for access licensing.

112.   ISED should take a more active role in promoting or mandating subordinate licensing in service areas where 50/10 broadband service is not available. Consumers in these areas will be better served by a subordinate licensee who builds a network to deliver broadband service, than they are by a primary licensee that has not.

113.   CanWISP believes that more stringent deployment requirements associated with all primary spectrum licences would also encourage more subordinate licensing. Primary licensees who do not intend to deploy in rural areas in the foreseeable future may choose to meet deployment requirements by subordinating licences to other carriers.

Question 46
ISED seeks comments on what additional information, if any, should be included in the draft form shown in annex D.

114.   CanWISP has no further additions to suggest to ISED's proposed sample spectrum availability inquiry form.

115.   It would be helpful for ISED to provide those who wish to obtain subordinated spectrum with contact information for primary licensees.

6.0   WHITE SPACE POLICY UPDATES AND RRBS MORATORIUM

Question 47
ISED is seeking comments on its proposal to remove the current restriction on database hosting in order to facilitate cloud-based database hosting solutions.

116.   CanWISP supports ISED's proposal to permit TVWS database hosting outside of Canada. This requirement would encourage more database administrators to enter the Canadian market, bringing choice and competition to TVWS operators.

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[7]   National Broadband Internet Service Availability Map, at
https://www.ic.gc.ca/app/sitt/bbmap/hm.html?lang=eng.

Question 48

ISED is seeking comments on its proposal to allow the use of TV channels 3 and 4 by all types of WSD.

117.   CanWISP has no comment on this question.

Question 49

ISED is seeking comments on its proposal to no longer renew existing RRBS licences after March 31, 2027.

118.   CanWISP supports this proposal. CanWISP foresees that RRBS systems will be replaced with TVWS systems now that the TVWS equipment ecosystem is developing. It is reasonable to expect that the ecosystem will continue to develop and that RRBS system operators will be able to obtain replacement equipment.

7.0   CONCLUSION

119.   CanWISP strongly supports ISED's proposed access licensing framework.

120.   If this framework is implemented in a way that provides fast and straightforward access to spectrum, it will foster investment, new services, and competition in rural communities across Canada.

121.   By targeting un-deployed spectrum with expired licence terms, ISED will leverage under-utilized resources for the benefit of rural consumers.

122.   However, the proposed framework will not assist numerous under-served communities and households within Tier 5 areas that have minimal deployments in either a single population centre or along a highway corridor. ISED should take a more active role in promoting or mandating subordinate licensing in service areas where 50/10 broadband service is not available. Consumers in these areas will be better served by a subordinate licensee who builds a network to deliver broadband service, than they are by a primary licensee that has not.

123.   The absence of deployments in many remote and rural Tier 5 areas is testament to the negligible value of these licences to primary licence-holders. ISED is not infringing on primary licence holders' ability to use their licences by making block – Tier 5 pairs available where no deployment has been made.

124.   CanWISP agrees with ISED's assessment that Tier 5 service areas constitute the appropriate size for access licensing. CanWISP encourages ISED to consider smaller licence areas if requested by the applicant.

125.   ISED's proposal to apply the same technical rules on access licensees and primary licensees will support the coexistence of operators.

126.   The conditions of licence should mirror the conditions of licence associated with other licensed bands. Licences should be transferable, subdividable and eligible for subordination, and licence terms should be ten years. These conditions provide operators with the confidence to invest in building networks.

127.   The 800 MHz cellular band and PCS blocks A through F are good initial bands for access licensing. Other bands, such as AWS, should follow.

128.   CanWISP encourages ISED to make all carriers eligible for spectrum access licences, as long as they have no un-deployed spectrum in the same band group.

129.   By increasing access to spectrum, ISED will increase investment, innovation, and consumer choice. Targeting under-utilized spectrum is an efficient and creative way to address spectrum scarcity in rural and remote areas.

130.   CanWISP thanks ISED for the opportunity to participate in this consultation.

![CanWISP logo]

Branchons nos Communautés
Connecting Communities

VIA E-MAIL: ic.spectrumengineering-genieduspectre.ic@canada.ca

October 26, 2021

Innovation, Science and Economic Development Canada
Senior Director, Spectrum Planning and Engineering
Engineering, Planning and Standards Branch
235 Queen Street, (6th Floor, East Tower)
Ottawa ON K1A 0H5

Dear Sir:

Subject: **Innovation, Science and Economic Development Canada, *Radiocommunication Act*, Notice No. SLPB-004-21 — Consultation on New Access Licensing Framework, Changes to Subordinate Licensing and White Space to Support Rural and Remote Deployment, *Canada Gazette*, Part I, Vol. 155, No. 33, August 14, 2020, at p. 4537**

1.   Canadian Association of Wireless Internet Service Providers ("CanWISP") is pleased to submit the attached comments in response to the above Notice.

2.   CanWISP thanks ISED for the opportunity to comment on the proposed new access licensing framework, changes to subordinate licensing, and changes to the white space rules and RRBS policy framework.

3.   If there are any questions concerning these comments, please do not hesitate to contact the undersigned.

Yours truly,

Jonathan Black
Executive Director

Comments for:

Consultation on New Access Licensing Framework, Changes to Subordinate Licensing and White Space to Support Rural and Remote Deployment

SLPB-004-21

August 2021

Spectrum Management and Telecommunications

October 26, 2021

Introduction

1. The Federation of Canadian Municipalities (FCM) welcomes the opportunity to provide Comments to ISED on its Consultation on New Access Licensing Framework, Changes to Subordinate Licensing and White Space to Support Rural and Remote Deployment.

2. FCM has been the national voice of municipal government since 1901. Our members include more than 2,000 municipalities of all sizes, ranging from Canada's largest cities to rural communities, to northern communities. FCM also includes 20 provincial and territorial municipal associations. Together, FCM members represent more than 90 percent of all Canadians from coast to coast to coast.

3. Municipal leaders from across Canada assemble each year to set FCM policy on key issues, which allows FCM to advocate for municipalities to be sure their citizens' needs are reflected in federal policies and programs. FCM's work benefits every municipal government and taxpayer in Canada, and our programming delivers tools that help municipalities tackle local challenges.

4. Across Canada, broadband connectivity is an enabler and prerequisite to economic development, access to essential services, and quality of life. Over the past decade, FCM rural members have increasingly sounded the alarm about the importance of closing the digital divide to meet the needs of the estimated two million Canadians in remote and rural areas, some of whom live in close proximity to large urban centres, who still lack access to affordable, reliable, high-quality broadband.

5. FCM takes an active role in consultations with the Canadian Radio-television and Telecommunications Commission (CRTC) on regulatory measures to improve connectivity in rural and remote areas and welcomes ISED's objective of accelerating deployment in rural and remote regions of Canada in the present consultation.

Alignment with ISED's objectives

6. FCM understands that spectrum is a limited and scarce resource and that ISED has the responsibility of ensuring the spectrum resource is put to use by licence holders for the maximum benefit of Canadians.

7. ISED policy objectives, as stated in paragraph 8 of the Consultation document, focus on a coordinated approach to connectivity as follows:

- facilitate the deployment and timely availability of services across the country, with an emphasis on rural and remote regions
- foster investment and the evolution of wireless networks by enabling the development of innovative and emerging applications
- support sustained competition in the provision of wireless services so that consumers and businesses benefit from greater choice and competitive prices

8. FCM supports ISED's policy objectives in relation to this consultation and underscores that spectrum policy is a critical lever in improving availability of broadband services across the country and ensuring that services in rural and remote areas are on par with those of urban centers.

FCM's assessment of the situation around Access to Spectrum in rural and remote areas of Canada

9. Since 1999, ISED has held 14 spectrum auctions, covering over a dozen spectrum bands, which have enabled Canadian service providers to introduce new services. The 3500 MHz band, auctioned by ISED in June 2021, is one of the first bands to be dedicated to fixed and mobile communications on a global basis. Even though 3500 MHz band propagation characteristics are not as favorable as those of other mid-band spectrum bands, the 3500 MHz band is coveted by service providers around the globe as a keystone for 5G deployment.

10. The Canadian 3500 MHz auction was held at the Tier 4 level by ISED, meaning that the country was divided into 172 licence areas, of which 166 include a portion of territory qualified by ISED as either rural or remote.[1]

11. The auction resulted in an average price paid of $2.28/MHz/Pop, a high price for 3500 MHz spectrum in comparison to other jurisdictions. While prices varied considerably among metro, urban, rural, and remote areas, in many cases, smaller service providers either decided not to participate, or if they did participate, were unable to secure affordable spectrum. Of the approximately 50 WISPs which that are members of the Canadian Wireless Internet Service Providers Association (CanWISP) and which specialize in services to rural areas, none of these entities participated in the 3500 MHz auction.

12. While detailed auction results have not been published by ISED, based on provisional results for three rural service providers which acquired spectrum in rural areas, the rural prices ranged from $0.68 to $177/MHz/Pop and importantly, resulted in high multiples of the reserve price.

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[1] https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/h_sf01627.html#TierMap The only Tier 4 service areas that do not include a portion of rural or remote territory as defined by ISED are Victoriaville, Montreal, Toronto, Niagara/Ste Catharines, Thunder Bay and Vancouver.

Examples include Ecotel: $0.68/MHz/Pop (13 times reserve) in Fort McMurray and Labrador; Valley Fiber $1.38/MHz/Pop (27 times reserve) in rural Manitoba; Sogetel: $1.77/MHz/Pop (34 times reserve) in rural Quebec (except Sorel and Drummondville which ISED considers urban). Past auctions have typically settled under three times reserve price nationally which includes high priced metropolitan areas, i.e., the 600 MHz auction in 2019 was priced at 2.3 times reserve and the 2500 MHz auction in 2015 was priced at 2.9 times reserve.

13. FCM submits that access to spectrum in rural and remote areas plays a key role in enabling service providers operating in these areas to deploy connectivity services for their subscribers in an affordable manner. However, smaller service providers in rural and remote areas have struggled to secure the affordable spectrum necessary to provide the bandwidth and quality of services expected by their subscribers.

14. FCM therefore submits that if access to spectrum is a key component of enabling service providers in rural and remote areas of Canada to fulfil ISED's policy objectives, and that spectrum is not affordable in rural and remote parts of Canada, then corrective measures need to be undertaken by ISED as the national spectrum regulator.

15. In that context, FCM welcomes ISED's initiative to propose a new licencing framework for unused Access Spectrum and wishes to highlight the importance of getting the new framework right including the following measures: establishing eligibility rules; deployment conditions along with the administrative processes required for their implementation; and the ongoing management of the new licencing framework. These measures will maximise the ability of service providers in rural and remote areas to use spectrum to improve connectivity.

FCM's assessment of ISED's past spectrum sharing initiatives

16. In paragraph 26 of the Consultation document, ISED lists its recent efforts to promote spectrum sharing in Canada, including allowing terrestrial mobile and fixed services to share the mmWave band with fixed satellite service, introducing the flexible use concept to a variety of spectrum bands, and developing the technical and policy framework for white space.

17. FCM notes various approaches listed by ISED in the consultation document are evolutive in nature, and although each of them is a step in the right direction towards spectrum sharing, these initiatives will have to be complemented by other measures to bridge the digital divide.

18. FCM submits that ISED's most notable success in terms of spectrum sharing initiatives to date has been the introduction of the "all come all served" licensing framework in the 3.65 GHz band in 2009 through the release of its SP 3650 MHz - Spectrum Utilization Policy, Technical and Licensing Requirements for Wireless Broadband Services (WBS) in the Band 3650-3700

MHz.[2] The overlap of the Canadian WBS band with the CBRS band in the US led to the availability of a 3GPP ecosystem over LTE band 43 and the emergence of proprietary technologies. Combined with the affordability of the WBS band, this ecosystem allowed small Internet Service Providers across the country to make use of the spectrum in rural and remote areas in the deployment of fixed wireless internet service.

19. FCM submits that in order for ISED to achieve its policy objective of improving connectivity and facilitating the deployment and timely availability of services in rural and remote areas, it must give additional consideration to affordable spectrum, propagation characteristics of the band made available, and availability of a commercial ecosystem. Correspondingly, integration of these measures in the new Access Framework would foster investment and the evolution of wireless networks by enabling the development of innovative and emerging applications as well as supporting sustained competition in the provision of wireless services. This shift would allow consumers and businesses – especially in rural and remote areas – to benefit from greater choice and competitive prices.

20. FCM believes harmonization between ISED and CRTC policies is critical to the success and viability of service providers serving rural and remote communities.

21. FCM notes that ISED is crafting a new Access Spectrum licencing framework to make available unused rural and remote spectrum. However, in the absence of ISED harmonizing its new framework with that of the CRTC in in TRP-2021-130, which established spectrum ownership at the Tier 4 level or higher as an eligibility criterion for the MVNO regime, there is a risk that the distinct regimes will run at cross purposes. For instance, rural service providers who wish to participate in the new CRTC MVNO regime for deployment of mobility services may not be deemed eligible by the CRTC due to their spectrum holdings being smaller than the Tier 4 threshold.

22. FCM believes there is a risk of policy gap if the implications of the CRTC's new MVNO policy regime are overlooked by ISED. For instance, the viability of a service provider could be jeopardized in the scenario wherein it is in the process of implementing an MVNO operation in a given Tier 4 licence, when simultaneously, another entity applies for and is accorded an unused Tier 5 licence within the Tier 4 from ISED. Because the service provider no longer holds spectrum in the entire tier 4 level, it could lose its eligibility to CRTC's MVNO tariff in the Tier 4, assuming that CRTC applies the interpretation of spectrum ownership at a Tier 4 level or higher. The approach by which spectrum must be held by an MVNO candidate for the entire Tier 4 where it wishes to access the MVNO tariff, regardless of spectrum ownership in other Tier 4 areas, is favoured by incumbents.

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[2] *See* https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf09540.html.

FCM answers to selected ISED questions

*Q2 **ISED is seeking comments on its proposal to issue access spectrum licences and access radio licences on a first-come, first-served basis.***

23. FCM agrees that "First Come First Served" (FCFS) works relatively well once the process is established and fully operational. However, in the first few days or weeks after a band becomes available in the new regime, FCFS is insufficient to ensure spectrum is fairly assigned in the case where there is an initial surge in spectrum applications which significantly exceeds supply of spectrum. FCM submits that ISED should register all applications during the initial launch period and rank applications received during that time using a set of published criteria that are considered to best fulfil ISED's policy objectives. Some criteria that could be considered in this regard are: new deployment as opposed to upgrade on existing deployment; unused spectrum assets of the applicant; and quantity of spectrum (bandwidth) already held by the applicant, etc.

24. In the likely scenario wherein ISED receives multiple applications in the first week of initiation of the framework, FCM submits that it would be unfair, in a given Tier 5 area, to assign the spectrum to an applicant simply based on its ability to submit the application first. Smaller service providers in rural areas may not be in a position to quickly marshal the necessary resources to prepare simultaneous applications. Once things have stabilised, FCM submits that ISED should revert to the FCFS method for the continuance of the framework. Similarly, FCFS should be applied in the scenario where only one application (or none) was received during the launch period.

*Q9 **ISED is seeking comments on its proposed process for identifying rural and remote Tier 5 service areas in which there is unused spectrum that would be made available for access spectrum licensing.***

25. ISED proposes to use its Spectrum Management System (SMS) site licence database – currently used by licence holders to report details of their wireless site locations, to determine if spectrum in a Tier 5 area is available or not. FCM submits that the accuracy of the SMS site licence data is not guaranteed, especially among small players who do not necessarily possess the required resources to continuously provide updated reports.

26. FCM also notes that ISED is proposing to qualify the spectrum as unused if there are no radio site locations (towers) within the borders of a given Tier 5 area.

27. FCM notes that it is possible for spectrum to be 'in use' in a given Tier 5 area without the Tier 5 area containing any radio sites in the SMS data when site locations are close to the Tier 5 borders and propagation characteristics and topography are favorable.

28. FCM therefore submits that while SMS data is a good criterion for a preliminary analysis of the presence of unused spectrum blocks, site coverage of surrounding locations needs to be measured at the specific frequency under consideration to confirm whether the spectrum is truly available.

Q12 ISED is seeking comments on the options considered for eligibility.

Option 1, in order to be eligible for an access spectrum licence, at the time of application, an applicant must not hold a spectrum licence for undeployed commercial mobile, fixed, or flexible use spectrum, in the same Tier 5 licence area as the area for which it is seeking an access spectrum licence.

Option 2, in order to be eligible for an access spectrum licence, at the time of application, an applicant must not hold a spectrum licence, whether deployed or undeployed, for commercial mobile, fixed, or flexible use spectrum, in the same Tier 5 licence area as the area for which it is seeking an access spectrum licence.

29. FCM submits that with either Option 1 or Option 2 in place, ISED runs the risk of preventing certain worthy applicants from accessing spectrum, an approach which could undermine ISED's policy objective of facilitating the deployment and timely availability of services in rural and remote communities.

30. As an example, FCM believes it is possible for a wireless service provider to hold undeployed spectrum in a given rural or remote Tier 5 area because the quantity of spectrum held is insufficient to support a successful deployment of services in the area. However, in the scenario that undeployed spectrum is combined with additional spectrum underutilized by another licensee, the project could then become viable, and the service provider could proceed with the deployment of services. In this example, FCM submits that the implementation of Option 1 would have prevented this service provider from accessing the spectrum it requires to better serve its rural subscribers.

31. FCM notes that it is also possible that a wireless service provider might have already deployed service in a given rural or remote area, but that the amount of spectrum owned by the service provider does not allow it to provide the services corresponding with the download speeds or capacity that end users expect. In such case, by accessing spectrum underutilised by another entity, the service provider would have the possibility of improving the quality of service offered to its end users in an affordable manner. FCM submits that the implementation of Option 2 would have prevented this service provider from accessing spectrum it needs to serve its subscribers.

32. FCM submits that ISED should focus on the fulfilment of its policy objectives and implement measures to prevent spectrum hoarding rather than exclusive focus on existing spectrum holdings of applicants.

33. For instance, FCM submits that ISED could determine that an applicant who obtains a licence via the new licencing framework and does not deploy it to provide service during the 3-year term would be deemed to be ineligible to apply again for a certain period of time after the 3-year period expires.

Q16 ISED is seeking comments on its proposal to align the deployment conditions for access spectrum licences with the relevant conditions of licence currently applied to the licences in the specific band, taking into account any differing characteristics such as Tier sizes, and the timing as to when those deployment requirements should apply. ISED is also seeking comments on the appropriateness of existing deployment requirements for private networks.

ISED will consider alternative proposals for the deployment requirements for access spectrum licences. Such proposals should contain a rationale and discussion of their implications for ISED's policy objectives.

34. FCM agrees that deployment requirements are a necessary component of a new Spectrum Access Licencing Framework but submits that these should be simple to implement and measure by both ISED and the service provider. Given the technical complexities involved in the deployment of Radio Access Networks (RAN), FCM submits that a 24-month period to put the spectrum to use would be reasonable. Alternatively, given the short term of the licence (three years) proposed by ISED, the regulator could simply require that the spectrum be deployed and used to provide services prior to first renewal.

35. FCM submits that applicants who have sat on their assigned licences for three years and thus not deployed should not be eligible to apply again for a certain period at the end of the first term to prevent them from indefinitely holding on to spectrum.

Q27 ISED is seeking comments on the process for making access spectrum licences available and the options described in section 6.6.7 of the Consultation document.

36. FCM submits that ISED should not release the spectrum in slices or 'tranches' to ensure that it is able to maintain its 28-day service obligation as suggested in Option 2 of Q27.

37. FCM submits that all PCS and Cellular spectrum (that is targeted for release) should be released at the same time under the new framework to avoid the complexity and uncertainty of multiple applications for a given project.

38. At paragraph 93 of the Consultation document where ISED proposes simultaneous release of spectrum under Option 1, ISED proposes to modify its service standard from 28 to 126 calendar days to account for a high demand scenario. FCM submits Option 1 is preferable because it allows for a simpler and more straightforward process for applicants. FCM further submits that it is in the interest of Canadians that spectrum applications be treated in a fair but expeditious manner, and requests that ISED's proposal to extend the service standard should only apply in exceptional cases where there is a high volume of applications that cannot reasonably be processed under the current standard.

Q43 ISED is seeking comments on the potential or actual benefits of subordinate licensing to increase rural broadband access and accommodating new innovative network usage.

39. While FCM agrees with ISED that regulatory efforts to date have not succeeded in fostering a vibrant secondary market for spectrum licences or promoting subordinate licencing, FCM believes that the new framework, with the appropriate adjustments, would be better suited to achieve these policy goals. Thus, under the new Access Spectrum Licencing regime, entities would be encouraged to subordinate their spectrum rather than losing it to the new framework.

Q44 ISED is seeking comments on ways in which to streamline the general application requirements for subordinate licences as set out in sections 5.6.3 and annex D of CPC-2-1-23. ISED also seeks proposals to streamline the application process for all subordinate licence applicants, including those in commercial mobile bands who must also provide material addressing the criteria and considerations in section 5.6.4 of CPC-2-1-23. In these proposals, ISED also seeks comments as to how parties can demonstrate (e.g., an attestation, or other commitment) that their request for a subordinate licence does not constitute a transfer, deemed transfer, or prospective transfer as discussed in section 8.2.1 of the Consultation document.

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Q45 ISED is seeking comments on facilitating subordinate licensing and encouraging secondary market transactions including:

- *Should additional changes be made to existing licences that will encourage the use of subordinate licences as a means to help deploy more services?*

- *Given ISED's regulatory role, are there any issues or actions ISED should consider?*

40. FCM submits that the utilization of a database that provides geographical representation of mobile and flexible use spectrum licences across the various licence areas, along with primary ownership details (including contact information of primary and subordinate licence holders),

would strongly support ISED's objectives of facilitating subordinate licensing and encouraging secondary market transactions.

41. Currently, interested applicants, especially smaller service providers, often struggle to identify the owner and location of spectrum. Although the information is public, it requires a significant amount of effort on the part of prospective applicants to determine spectrum ownership.

42. FCM submits that ISED's Spectrum Management System (SMS) site licence database should incorporate the following key information: the specific spectrum that is undeployed/available including Tier 5 or location; which licensee has control over the spectrum and detailed contact information of the licensees' responsible resources; and a search function to make key information readily accessible.

Conclusion

43. FCM applauds ISED's current effort to establish a new Access Spectrum Licencing framework for unused spectrum in rural and remote Tier 5 areas. FCM encourages ISED to consider the connectivity challenges specific to rural and remote regions of Canada and ensure that a "rural lens" is applied throughout the design and implementation of the new framework. Finally, FCM encourages ISED to consider how the present consultation will interact with existing CRTC policies with respect to rural and remote deployment to ensure that the regimes are complementary and mutually reinforcing.

– End of document –

October 26, 2021

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Via email: spectrumauctions-encheresduspectre@ised-isde.gc.ca

Re: Canada Gazette, Part I, Volume 155, Number 33 - Notice No. SLPB-004-21 — Consultation on New Access Licensing Framework, Changes to Subordinate Licensing and White Space to Support Rural and Remote Deployment

Thank you for this opportunity to provide comments on Innovation, Science and Economic Development Canada's (ISED) *Consultation on New Access Licensing Framework and Changes to Subordinate Licensing and White Space to Support Rural and Remote Deployment*. Fertilizer Canada represents manufacturers, wholesalers, and retail distributors of nitrogen, phosphate, potash, and sulphur fertilizers – the cornerstone of Canada's agri-food economy. The primary customers for our member companies are Canada's farmers, who frequently face barriers to connectivity due to their location in rural areas.

Fertilizer Canada and our member companies support the intent of the proposed changes, and we are pleased to see that the consultation document recognizes agriculture as one of the sectors that would stand to benefit from expanded spectrum access in rural and remote areas. As technology used on-farm advances, it is increasingly important that Canada's farmers are able to connect to reliable and affordable wireless telecommunications services. This has become even more apparent recently as the COVID-19 pandemic has necessitated a stronger reliance on Internet access not only for farmers, but for many Canadians in rural areas now working or studying from home. Farmers and other Canadians in rural areas would benefit greatly from expanded access to reliable high-speed Internet, and spectrum policy should heavily emphasize expanding access to high-speed Internet in the near-term to ensure that farmers can take advantage of advancements in on-farm technologies and remain competitive with their international counterparts.

Expanded spectrum access would also support the Government of Canada's emission reduction commitments. Agriculture has been identified as an important sector to help achieve these commitments, and a key barrier to adopting technologies shown to help reduce emissions on-farm, such as variable rate scripts, is the access to wireless communications to download and implement necessary software. Currently, software in planting and harvesting equipment has the capability to track increasing amounts of data every year to help farmers make more informed decisions on their input usage. However,

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with limited access to rural connectivity, implementing this technology is challenging and time consuming for many farmers.

While ISED's proposed changes are a step in the right direction, we believe that the policy could be more effective with the following adjustments:

1. **We recommend that, as part of the proposed changes, ISED introduce standards that would require network builders to use licensed spectrum within 3 - 5 years, which would encourage faster deployment of spectrum in rural and remote areas.**

2. **To further encourage building and deploying spectrum for rural areas, ISED should also consider applying a "Use it or Lose it"-style policy not only to the spectrum bands under consideration in this consultation, but to all bands and telecommunications companies. This would motivate telecommunications companies to put licensed spectrum to use as soon as possible, which would be greatly beneficial to rural and remote communities where connectivity is urgently needed.**

Thank you again for this opportunity to engage with ISED and provide feedback on the proposed measures to support rural and remote spectrum access and connectivity. Fertilizer Canada, our member companies, and their customers all know the importance of access to reliable and affordable high-speed Internet, and we strongly support the intent of the proposed changes. Please do not hesitate to contact us should there be any questions about the recommendations above.

Sincerely,

McKenzie Smith
Director, Stewardship & Regulatory Affairs

ISED SLPB-004-21

Consultation on New Access Licensing Framework, Changes to Subordinate Licensing and White Space to Support Rural and Remote Deployment

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Comments of the
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I. Introduction

1. The First Mile Connectivity Consortium (FMCC) is an incorporated independent not-for-profit national association. Our members are First Nations Internet service providers known as "community/regional intermediary organizations." Our associate members are university and private sector researchers and others interested in Indigenous and community communications and telecommunication services for the public good. Our work focuses on innovative solutions to digital infrastructure and services with and in rural and remote regions and communities across Canada. More details about our members and activities are available at http://firstmile.ca

2. Many FMCC members began as remote and rural First Nations community organizations that came together when Industry Canada initiated the First Nation SchoolNet program; others belong to Indigenous non-profit service providers who are determined to bring quality services to remote areas. For many years, these organizations have worked with Industry Canada and now Innovation, Science and Economic Development Canada (ISED), Indigenous Services Canada, the Canadian Radio-Television and Telecommunications Commission (CRTC), and other agencies to develop effective solutions for broadband infrastructure and services in these regions and communities.

3. Over the years, the FMCC has developed considerable expertise on the communications needs of people in remote communities, and how their communities can become owners and providers, as well as consumers, of communications services. FMCC members have delineated policies and approaches that work. Success stories and research on community-based networks can be found in this free downloadable e-book: http://firstmile.ca/new-book-stories-from-the-first-mile-digital-technologies-in-remote-and-rural-indigenous-communities/

4. We are active participants in policy and regulatory proceedings, including in past spectrum consultations held by Industry Canada and ISED. Our policy activity focuses on innovative solutions to telecommunications infrastructure and services with and in rural, remote and Northern communities. To meet these goals, we focus on a 'First Mile' approach, which advocates for and supports community ownership and control of infrastructure and services.

II. Spectrum Issues for Rural, Remote, and Indigenous Regions

5. We welcome this consultation on unused spectrum by ISED "to support innovation and the availability of rural services…." (para 1). We note ISED's reference to the *Spectrum Policy Framework for Canada* (SPFC), "which states that the objective of the spectrum program is to maximize the economic and social benefits that Canadians derive from the use of the radio frequency spectrum resource (para 8). We also note that ISED refers to the Digital Charter which lists universal access as its first principle, and that ISED recognizes affordability as a key component of access (para 9).

6. However, we point out that there is no reference to Indigenous peoples or First Nations in this entire document. **This oversight must be addressed.** As we explain in our responses below, Indigenous rights and lands as well as legal precedents must be considered in allocation of spectrum to serve Canada's rural and remote regions.

7. With respect to both fixed and mobile wireless projects, spectrum access and licensing rules must provide more opportunities for small and non-profit community and Indigenous providers and the communities they serve. There are many already-existing examples of Indigenous entities utilizing spectrum to deliver services. For example, the Mamawapowin Technology Society uses unlicensed spectrum to provide free public wi-fi in Maskwacis, AB.[1] With respect to mobile spectrum, for more than 10 years, K-Net Mobile has provided 3G cellular services in 15 rural/remote First Nations in Northern Ontario through a subordinate licensing agreement with Rogers.[2] These two examples demonstrate the kinds of innovations that are enabled by increased Indigenous access to and control over spectrum resources.

8. First Mile projects support the policy goals outlined in the *Telecommunications Act* and the *Spectrum Policy Framework for Canada*. Specifically, First Mile projects use spectrum in a way that maximizes the economic and social benefits for Canadians. They can support competition, reflect innovation, and help make wireless infrastructure and services available to Canadians across the country, including those in rural areas, in a timely fashion.

9. Barriers to deployment experienced by FMCC member organizations and others operating in rural/remote regions include limited spectrum access. As noted in a 2018 audit by the Office of the Auditor General on *Connectivity in Rural and Remote Areas*: "… small Internet service providers did not have sufficient access to high-quality spectrum to support broadband deployment in rural and remote areas" (para 1.19). Various parties in CRTC 2019-406 also pointed out that access to spectrum is a clearly defined barrier to deployment in these regions.

10. There is an existing public record of proposals from Indigenous entities to secure access to spectrum for their connectivity needs. The Assembly of First Nations has issued numerous resolutions regarding connectivity and spectrum access. Most recently, in Resolution 19/2020 the Assembly of First Nations (AFN) explicitly calls on Indigenous Services Canada and ISED to support and work with First Nations to enable spectrum access. Other examples include policy recommendations issued as an outcome of the annual Indigenous Connectivity Summit. In 2019, these included the proposal that:

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[1] See: https://mamawapowin.org/

[2] See: https://mobile.knet.ca/node/464

> "Federal regulators should ensure that Indigenous governments and Indigenous-owned entities have first rights to the spectrum over their lands. Unused spectrum over Indigenous lands should be reallocated for Indigenous use."[3]

11. We note that in some jurisdictions, including the U.S. and New Zealand, Indigenous groups have asserted that spectrum is a natural resource subject to treaty. As a resource, spectrum can be utilized to deploy connectivity services (e.g. used by Indigenous service providers) or leased to service providers as a means to generate revenues. In the U.S., spectrum is considered a bankable asset that can be used as loan collateral. Recently, the Federal Communication Commission (FCC) in the U.S. developed a Tribal Priority Spectrum for 2.5 GHz spectrum licenses.[4] After several Tribes successfully demonstrated proof of concept for fixed wireless networks, the FCC established a formal Tribal priority spectrum policy. Eligible Tribal entities had a window of time to apply for licenses over their territories – they had up to two years to deploy services to a certain amount of end users (e.g. 50%) or lose their license. More than 400 Tribes applied for these licenses.[5]

12. Acknowledging the successful efforts between Indigenous groups and Spectrum license authorities in other parts of the world, we believe it is important to highlight this existing work undertaken by Indigenous parties in the context of this specific consultation. Providing a working example of current practices can be a starting point for a fulsome review and discussion of spectrum access (and the Spectrum Policy Framework for Canada). Similar to the development and reform of other aspects of telecommunications and broadcasting policy, this issue will require additional opportunities for Indigenous parties to co-create an inclusive and equitable policy for spectrum allocation and management.

13. Below, we briefly summarize our prior submissions regarding issues related to mobile and fixed wireless infrastructure and service. We present this material to demonstrate evidence and proposals we have already submitted on the record in prior consultations. These include two consultations held by Industry Canada 2014 and a recent consultation held by the Canadian Radio-Television and Telecommunications Commission (CRTC) in 2019-2021.

14. We then provide comments on the present consultation (ISED SLPB-004-21) and initial responses to the questions raised in the consultation document. We reserve the right to expand upon or modify our responses during the Reply Comments phase of these proceedings.

III.   Summary of Prior FMCC Consultations on Spectrum Issues

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[3] See: https://www.internetsociety.org/wp-content/uploads/2020/01/2019-ICS-Policy-Recommendation.pdf

[4] See: https://www.fcc.gov/25-ghz-rural-tribal-window

[5] See: https://www.fcc.gov/25-ghz-rural-tribal-maps

15. The FMCC has been engaged in policy consultations regarding spectrum since 2014. We have pointed out challenges faced by Indigenous service providers in securing access to spectrum through submissions to both ISED (including Industry Canada) and the CRTC.

FMCC Submission to Industry Canada Consultation SLPB-004-14 (September 2014)

16. On September 4, 2014 the FMCC filed an intervention in Industry Canada's *Consultation on the Technical, Policy and Licensing Framework for Advanced Wireless Services in the Bands 1755-1780 MHz and 2155-2180 MHz (AWS-3).*[6] In our submission, we provided comments on service tiers and minimum bids, and expressed our concerns with the geographic and population metrics used to determine existing tiers and corresponding licenses. We also noted that the expense of some proposed minimum bids are a challenge for independent, non-profit cellular providers serving rural, remote and Northern communities. We raised concerns that these high costs restrict the ability of these organizations to expand or establish operations.

17. Finally, we raised questions regarding if and how Industry Canada's spectrum framework was harmonized with the agency's recently announced funding for broadband provision in remote and northern regions (the "Connecting Canadians" initiative).[7] We were interested in Industry Canada's position regarding the administration of broadband initiatives vis-à-vis spectrum licensing initiatives. Our members continue to view these two activities as complementary opportunities to address digital divide issues and support First Mile development in rural, remote and Northern communities.

FMCC Submission to Industry Canada Consultation DGSO-003-14 (October 2014)

18. On October 7, 2014 we filed an intervention in Industry Canada's *Consultation on Policy Changes in the 3500 MHz Band (3475-3650 MHz) and a New Licensing Process in Rural Areas.*[8] In our submission, we suggested that the success of First Mile projects is reflected in Industry Canada's observation that: "There is a continued demand for FWA [Fixed Wireless Access] in rural areas, much of which is being driven by local Internet service providers that are deploying high-speed broadband Internet services to rural Canadians" (paragraph 15).

19. We welcomed Industry Canada's proposal to re-examine the classification of Tier 4 Service Areas in Consultation DGSO-003-14 as either "rural" or "urban". We suggested that this proposal provided a precedent for an approach to re-configuring service tiers that can be used to further support First Mile development initiatives in the remote and rural regions that our constituent members work in.

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[6] Reference number (SLPB-004-14): Canada Gazette, Part I, August 2, 2014.

[7] See: http://www.ic.gc.ca/eic/site/028.nsf/eng/00588.html

[8] Reference number (DGSO-003-14): Canada Gazette, Part I, August 2014.

20. We also noted that the issue of consultation with Indigenous communities regarding spectrum usage has been raised by First Nations in the past, for example by the Assembly of Manitoba Chiefs in 2007.[9] We pointed Industry Canada to similar arguments for spectrum set-asides specific to Indigenous peoples in other regions of the world (such as in New Zealand).[10]

21. As an organization representing constituents in rural, remote and Northern communities, we offered to provide Industry Canada with examples of the effects of mobile service providers 'warehousing' spectrum.

FMCC Submission to Telecom Notice of Consultation CRTC 2019-406 – Spectrum Issues

22. On April 23, 2020, we filed an intervention in the CRTC's consultation regarding potential barriers to the deployment of broadband-capable networks in underserved areas in Canada.[11] We also filed Reply Comments, Final Comments, and Final Reply Comments in those proceedings. While we are aware that spectrum and satellite licensing and regulation fall primarily under the jurisdiction of ISED, we included comments on those issues at that time because of the important role that both resources play in connecting rural and remote communities. We provided our recommendations to contribute to a comprehensive and integrated policy framework to support the deployment and sustainability of telecommunications infrastructure and services to all Canadians, including those living in remote, Northern and Indigenous regions.

23. We argued that with respect to both fixed and mobile wireless projects, spectrum access and licensing rules must provide more opportunities for small and non-profit community and Indigenous providers and the communities they serve.

24. We also stated that effective spectrum management and regulation should support small and non-profit community operators and not only incumbents and other large providers.[12] Some Indigenous organizations such as K-Net Mobile in Northwestern Ontario already utilize spectrum through subordinate licenses, where available, to provide mobile services to their

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[9] See: http://www.cbc.ca/news/manitoba-chiefs-want-cellphone-revenue-1.662690

[10] See: http://online.wsj.com/news/articles/SB10001424127887323993804578611330239191130

[11] CRTC Notice of Consultation CRTC 2019-406.

[12] Organizations including the International Telecommunication Union (ITU) Development Bureau have recommended that administrations consider mechanisms to facilitate the development of broadband services in rural and remote areas by small and non-profit community operations. Recommendation ITU-D 19. WTDC 2017 report. https://www.itu.int/en/ITUD/Conferences/WTDC/WTDC17/Documents/WTDC17_final_report_en.pdf

populations. [13] However, existing spectrum licensing policies limit Indigenous organizations in providing wireless services.

25. We noted the Fall 2018 report of the Auditor General of Canada, which highlighted significant shortcomings in Canada's existing spectrum management regime:

> "[S]mall Internet providers did not have sufficient access to high-quality spectrum to support broadband deployment in rural and remote areas. The Department [ISED] auctioned spectrum licenses for geographic areas that were too large for smaller service providers to submit bids for. Also, the secondary market for unused spectrum did not function well, partly because licensees had little business incentive to make unused spectrum available for subordinate licensing" (p.4).[14]

26. We proposed that one solution would be a re-examination of mobile service tiers. We pointed to our previous filing in Industry Canada spectrum consultation (SLPB-004-14), where the FMCC commented on service tiers and minimum bids. We re-iterated our concerns with the geographic and population metrics used to determine existing tiers and corresponding licenses, and also noted that the expense of some proposed minimum bids is a challenge for independent, non-profit cellular providers serving rural, remote and Northern communities.

27. We recommended that the Broadband Fund and ISED recognize the need to ensure a more inclusive approach to the distribution of spectrum licenses that reflects the diversity of providers.

28. We also proposed that the Commission and ISED consider establishing spectrum set-asides or license transfer for Indigenous territories. This approach has been adopted by the FCC in the U.S. for 2.5 GHz spectrum. As noted above, the FCC is providing Native Tribes with an opportunity to secure 2.5 GHz spectrum covering their Tribal lands as a low-cost means to support broadband deployment in those communities.[15]

29. We noted that the FCC policy allows for applicants to determine the specifics of the license areas: "Applicants in the Rural Tribal Window may designate their own desired license areas, so long as the entire area is rural Tribal land, and the applicant has a local presence in the area…"[16]

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[13] See: http://mobile.knet.ca/

[14] See: http://www.oag-bvg.gc.ca/internet/English/parl_oag_201811_01_e_43199.html

[15] Source: https://www.fcc.gov/25-ghz-rural-tribal-window

[16] See: https://www.fcc.gov/25-ghz-rural-tribal-window

30. We recommended that ISED set aside portions of appropriate spectrum for fixed wireless for use by Indigenous communities through a program similar to that employed by the FCC.

31. Concerning the need for more accurate spectrum coverage maps for Indigenous regions, we noted the errors and omissions, such as those for the spectrum block in the western part of the Lake Huron First Nations treaty territory in and around Sault Ste. Marie (see para 58 below).

IV.   FMCC Comments on Questions Raised in ISED SLPB-004-21

32. In this section we respond to the questions listed in ISED's document.

Access Licensing Framework

Q1 ISED is seeking comments on its proposal to implement a new Access Licensing framework to make licenses available in rural and remote areas where there is unused spectrum.

33. We support the general concept of the Access Licensing framework to make spectrum licenses available in rural and remote areas. Wireless services, both fixed and mobile, are important for Indigenous residents of remote regions. For example, a survey of Indigenous communities in Northern Ontario in 2016 found that 85 percent of respondents wanted cellular deployed in their region because of health and safety concerns.

34. However, we note that there is no reference to Indigenous peoples or First Nations in this entire document. **Any new licensing framework must take into consideration the requirements and jurisdictions of Indigenous peoples, including their interests in building and deploying infrastructure and services**. Our past submissions to ISED and the CRTC have recommended that the Broadband Fund and ISED recognize the need to ensure a more inclusive approach to the distribution of spectrum licenses that reflects the diversity of providers (see paras 4-12 above).

35. In Section III we summarized existing policy interventions by Indigenous parties and others that highlighted barriers to spectrum access. There are additional examples of similar efforts in our research and policy interventions.

36. Spectrum should be considered a natural resource subject to Treaty and/or Indigenous Rights and Jurisdiction. Therefore, any Access Licensing framework should take into consideration Treaty and Indigenous Rights and economic reconciliation.

37. For example, Indigenous peoples should receive tangible benefit for natural resource development taking place in their territories, such as through Revenue-Sharing Agreements,

Impact Benefit Agreements (IBAs) or a similar mechanism. As noted in a 2015 report from the Parliamentary Information and Research Service:

> "IBAs are privately negotiated, legally enforceable agreements that establish formal relationships between Aboriginal communities and industry proponents….
>
> Broadly, IBAs serve two primary purposes. First, they seek to address the potentially adverse effects of development activities on Aboriginal communities, with a view to providing some compensation for these activities. Second, IBAs help to ensure that Aboriginal communities acquire benefits from resource development activities occurring on their traditional territories" (p.1).[17]

Q2 ISED is seeking comments on its proposal to issue access spectrum licences and access radio licences on a first-come, first-served basis.

38. Indigenous entities should have first right of refusal for spectrum licenses in their territories. For example, ISED could adopt an Indigenous Priority Access Window to allow Indigenous governments, organizations and/or service providers to obtain a license for spectrum in their territories.

39. In our submission to CRTC 2019-406, we recommended that the Commission and ISED establish spectrum set-asides or license transfer for Indigenous territories. This approach is being adopted by the FCC in the U.S. for 2.5 GHz spectrum. The FCC is providing Native Tribes with an opportunity to secure 2.5 GHz spectrum covering their Tribal lands as a low-cost means to support broadband deployment in those communities (See above, para 11).

40. That said, we note that colleagues working for Tribal entities in the U.S. have noted the limitations of the "rural" requirements, which blocks the ability for Indigenous communities and entitites operating closer to "urban" areas from accessing Tribal Priority spectrum. Therefore, we recommend that ISED work with Indigenous entitites to determine the most appropriate geographic eligibility.

41. Further, any request for spectrum that would serve or cover Indigenous lands should require consultation with those Indigenous representatives. FMCC has provided extensive materials regarding consultation with Indigenous entities on issues related to telecommunications infrastructures and services in past submissions in CRTC proceedings related to the CRTC Broadband Fund and barriers to deployment in remote regions, highlights of which are summarized in Section III above.

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[17] See: https://lop.parl.ca/staticfiles/PublicWebsite/Home/ResearchPublications/InBriefs/PDF/2015-29-e.pdf

42. Examples of models of Indigenous spectrum policies are available from Mexico, New Zealand and the United States. We refer to ISOC/Mozilla's submission to these consultations for a summary of these examples.

Q3 ISED is seeking comments on its proposal to use the rural and remote Tier 5 service areas as the basis to determine the rural and remote areas in which it will apply access licensing.

43. We commend ISED for developing the smaller Tier 5 licensing areas. As noted in prior ISED interventions, FMCC members have faced barriers to accessing spectrum licenses in the past due to the size and composition of service Tiers.

44. In the case of Access Licensing, we concur with ISOC and Mozilla's recommendation to support the use of Tier 5 service areas with the provision that ISED should reserve the right to consider and implement smaller Tier areas should Tier 5 regions prove problematic.

45. In their submission to these consultations, Joseph and McNally point out that while some Tier 5 service areas align relatively closely to existing Indigenous Land Claim Agreement areas, there are many areas where Indigenous territories are amalgamated into larger Tier 5 blocks. They suggest that ISED develop a mechanism to deal with the unforeseen consequences of the current Tier 5 divisions. We agree with this suggestion.

Q4 ISED is seeking comments on its proposed principles to be used when considering spectrum licensed or radio licensed bands where the proposed Access Licensing framework will apply.

46. We generally agree with the proposed principles, but we note that they focus only on technical criteria. See the response to Q5 below.

Q5 ISED is seeking comments on other principles it should take into account when considering bands where the proposed Access Licensing framework will apply.

47. We note that the current principles focus on technical criteria. We agree with Joseph and McNally's recommendation to foreground social use cases in the Access Spectrum licensing process, such as for community networks, Indigenous networks, and public good use cases.

48. The most remote and unserved/underserved communities should be prioritized in Access Spectrum allocations. For example, the telco servicing a Tier 5 area in northern Ontario put a freeze on installing any more landlines into these communities. As a result of that decision, some people were completely cut off, and even lack access to 911 service if the internet goes offline. Hunters and others engaged in on the land activities also require mobile service to

keep in contact with their families and for reasons of public safety. Therefore, these unserved regions and communities should get priority.

49. Entities that acquire spectrum to deploy broadband infrastructure and services should be required to consult with affected communities.

50. We also agree in general with ECN's proposal to add the following additional principles:

   a. An Indigenous priority window should be established (as outlined above).

   b. The spectrum made available for access licensing should enable the rural and remote communities to implement the same technologies available in metro areas, i.e. mmWave spectrum for 5G in the future.

   c. Development of projects using spectrum should be oriented toward long-term, sustainable/resilient systems that benefit communities and people who live in rural and remote areas....

   d. Collaborative work between smaller-scale entities such as community and municipal networks; Indigenous and regional service providers; etc. should be encouraged and supported.

Q6 ISED is seeking comments on adopting a flexible use licensing model for fixed and mobile services when issuing access spectrum licences.

51. We concur with this proposal to use a flexible use licensing model.

Q7 ISED is seeking comments on its proposal to use Tier 5 service areas for the proposed access spectrum licences and any associated potential technical challenges should this process be applied to all commercial mobile or flexible use frequency bands.

52. In general we agree with this proposal.

53. However, where spectrum covers Indigenous land and/or communities, consultation with their representatives should be required, and permission granted to use the spectrum before it is licensed.

Q8 ISED is seeking comments on any future adjustments to the licence areas for access spectrum licences, including consideration of more localized areas (e.g. smaller than Tier 5).

54. Tier 5 service areas are very large, typically including several isolated remote communities. See: https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/h_sf01627.html#tierMap

55. We agree with ECN's comment that the size of some Tier 5 service areas may pose challenges for smaller providers, including Indigenous providers.

56. We agree with ISOC/Mozilla's suggestions that the Tier 5 service areas should be reviewed at the expiry of the first round of licenses (i.e. after three years) and possible additional granularity in service area size be considered then.

Q9 ISED is seeking comments on its proposed process for identifying rural and remote Tier 5 service areas in which there is unused spectrum that would be made available for access spectrum licensing.

57. In some cases, the issue is not spectrum but service. There is a need for better maps that show both spectrum coverage and locations where services are provided.

58. In past consultations, Indigenous interveners have pointed out the need for more accurate spectrum coverage maps for Indigenous regions. For example, in CRTC 2019-406, Robinson Huron Treaty Litigation Fund noted: "At present, the most basic information is missing as illustrated by the spectrum block in the western part of the Lake Huron First Nations treaty territory in and around Sault Ste. Marie" (para 31).

59. We support ISOC/Mozilla's request for more information on how multiple applications for spectrum in a single Tier 5 service area will be handled. For example, Does spectrum assigned through this process grant exclusivity in the Tier 5 service area for the frequencies assigned?

Q10 ISED is seeking comments on its proposal to impose a condition of licence to prohibit existing primary and subordinate licensees' deployment in areas for which an access spectrum licence has been issued.

60. We support this proposal. A deadline should be stated by which the access spectrum licensee must be deployed.

Q11 ISED is seeking comments on its proposal that stations already deployed by primary or subordinate spectrum licensees within their service areas would be protected from subsequent deployment under access spectrum licences.

61. We agree that the existing deployments of primary and subordinate spectrum licensees should be protected. Evidence should be required that the stations have been deployed and service activated, and that the service meets specified Quality of Service (QOS) targets.

Q12 ISED is seeking comments on the above options for eligibility.

62. Both options have some advantages. Option 2, specifying that an applicant must not hold a spectrum license whether deployed or undeployed in the Tier 5 service area, would maximise the opportunity for new operators to gain access to spectrum.

63. However, Option 1 would at least specify that no applicant must hold a licence for undeployed spectrum, thus prohibiting an incumbent from acquiring more spectrum if it had not fully deployed any spectrum in the Tier for which it had a licence.

64. Since Tier 5 regions are very extensive, subregions could be required to implement either of these options.

Q13 ISED is seeking comments for Option 1 and Option 2, specifically should the deployed and/or undeployed spectrum be based on any frequency band (e.g. 2500 MHz) currently held by the applicant or only the band (e.g. PCS band) for which the application is made?

65. We propose that the deployed and/or undeployed spectrum should be based on any frequency band. For example, under Option 1, an applicant could not receive a licence if it had not deployed spectrum in any band in the Tier 5 region for which it had received a licence.

Q14 ISED is seeking comments on its proposal to issue access spectrum licences with a three-year licence term and the proposed wording of the condition of licence above.

66. In general, we support both the license term and the wording of the condition.

67. However, the condition states that the licence would be renewed unless a breach of licence condition has occurred, but does include build out as a condition. The licence condition should require build out within the three years. The license should not be renewed unless sufficient justification were given to explain the lack of completion.

68. We emphasize this requirement because there is a history of providers acquiring spectrum in Indigenous regions and communities but not deploying services or requesting unreasonable concessions to build out the networks. For example, one FMCC member organization based in Northern Ontario stated that a telco asked for co-location on a tower, free colocation in shelters, free back haul, and a cash contribution of $160,000 before it would consider bringing cellular service to the region. The Indigenous provider refused.

Q15 ISED is seeking comments on its proposal that access spectrum licences not contain transfer, subdivision or subordination privileges.

69. We disagree with the proposal that access spectrum licenses should not contain transfer, subdivision, or subordination privileges. Subordination is an important mechanism for extending services in rural, remote and Indigenous regions. See our responses to Q43 and Q45 below.

70. The rationale stated by ISED that access spectrum licences would not be awarded by auction is not relevant to the decision to include transfer, subdivision or subordination privileges.

Q16 ISED is seeking comments on its proposal to align the deployment conditions for access spectrum licences with the relevant conditions of licence currently applied to the licences in the specific band, taking into account any differing characteristics such as Tier sizes, and the timing as to when those deployment requirements should apply. ISED is also seeking comments on the appropriateness of existing deployment requirements for private networks.

71. We agree with the conditions in ISED para 59: Licensees would be required to meet the end-of-term deployment requirements in order to be eligible to renew the licence.

72. We have no comment on private networks at this time.

Q17 ISED is seeking comments on its proposal to apply the conditions of licence set out in annex B to access spectrum licences issued through the proposed Access Licensing framework.

73. We believe that Indigenous communities/providers should be exempt from spectrum fees. Also, we see no need to require 2 percent of Adjusted Gross Revenues to be spent on R&D. This requirement should be waived for Indigenous licensees.

74. We have no comments on the other conditions in Annex B at this time.

Q18 ISED is seeking comments on its proposal to make 800 MHz cellular available for access spectrum licenses in rural and remote Tier 5 service areas in which the existing primary or subordinate has no deployment.

75. We support this proposal.

Q19 ISED is seeking comments on its proposal to modify the CTFA, where relevant, to change the existing fixed service allocation to primary status in the 824-849 MHz/869-894 MHz range, noting that the fixed service is already allocated on a primary basis in the 890-894 MHz portion.

76. We agree that both Fixed and Mobile services should be authorized for this band.

Q20 ISED is seeking comments on its proposal to make PCS blocks A to F available for access spectrum licenses in rural and remote Tier 5 service areas in which the existing primary or subordinate licensee has no deployment.

77. We agree that both Fixed and Mobile services should be authorized for this band.

Q21 ISED is seeking comments on any other spectrum licence bands that meet the principles proposed in section 5 that could be considered for access spectrum licensing.

78. We have no comment at this time.

Q22 ISED is seeking comments on the proposal to generally adopt the same technical requirements, including coordination requirements, as published in RSS-132 and SRSP-503 in the cellular band, and RSS-133 and SRSP-510 in the PCS band for future access spectrum licences.

79. In general, we concur, but we note that coordination and field strength criteria may not be relevant in remote regions where there is no other use of the band, and where, for example, increased field strength may allow the signal to reach Indigenous people engaging in activities such as hunting, fishing and trapping away from their communities.

Q23 ISED is seeking comments on the above proposal to amend the Condition of Licence concerning "International and Domestic Coordination" for all existing spectrum licensees in blocks A and B of the cellular band and blocks A through F, inclusively, of the PCS band.

80. In general, we concur with this proposal.

Q24 ISED is seeking comments on its proposal that existing cellular and PCS stations under spectrum licences will be protected from access spectrum licence operations and would not be required to coordinate with new access spectrum licence operations in adjacent service areas.

81. In general, we concur with this proposal.

Q25 ISED is seeking comments on its proposal that any future stations deployed by existing cellular and PCS spectrum licensees would be subject to the coordination rules in SRSP-503 and SRSP-510 applied at the new Tier 5 service area boundary where an access spectrum licence has been issued.

82. In general, we concur with this proposal.

Q26 ISED is seeking comments on its proposal that existing radio licensees operating standard systems in the PCS band would be protected from access spectrum operations and

access spectrum licensees may not trigger displacement of existing radio licences in the PCS band.

83. In general, we concur with this proposal.

Q27 ISED is seeking comments on the process for making access spectrum licences available and the options described above.

84. There are some problems with both options.

85. For Option 1, making all access spectrum available at the same time, we do not know why ISED would specify precisely 126 days to process the licences, since it has no idea how many applications it will receive.

86. For Option 2, release of access spectrum in tranches, Indigenous organizations / communities / providers should get priority. Also, completely unserved areas should also be prioritized.

Q28 Under both options, ISED is seeking comments on its proposal to begin access spectrum licensing three months after the publication of the decision.

87. In general, we concur with this proposal.

Q29 Under both options, ISED is seeking comments on its proposals to limit the number of access spectrum licence applications to:
 Option 1: 20 per applicant per 12 month period
 Option 2: 5 per applicant at the opening of the access licensing process for each tranche.

 Both options seem completely arbitrary. However, no matter what approach is used, it should be reviewed after the first year to determine:
- How many licences were issued
- How long the process took per licence
- What problems arose etc.

   Then the process should be revised if necessary, based on this analysis.

Q30 Under Option 2, ISED is seeking proposals on how it should prioritize Tier 5 licence areas and spectrum blocks if it adopts a sequential release of spectrum for access spectrum licensing. Proposals should address the key considerations of equitable geographic distribution, coverage, impacts on existing licensees, potential business cases, and timeliness.

88. We think these criteria are not appropriate.

89. Indigenous regions should be given first priority. Indigenous and unserved regions should be given priority. See the response to Q27 above.

Radio Access Licenses

Q31 ISED is seeking comments on its proposal to issue site-specific access radio licences within rural and remote Tier 5 service areas under the Access Licensing framework.

90. We concur with this proposal

Q32 ISED is seeking comments on its proposal to follow its LMR licensing process to receive and review applications for access radio licences.

91. We have no comment at this time.

Q33 ISED is seeking comments on its proposal not to limit the number of access radio licence applications an applicant may submit via the Spectrum Management System for these bands.

92. We have no comment at this time.

Q34 ISED is seeking comments on potential eligibility restrictions for access radio licences.

93. We would like clarification of ISED's definition of "private networks" (para 103) and whether it applies to community broadband networks.

Q35 ISED is seeking comments on its proposal to apply the above conditions of licence to access radio licences.

94. We question the one year licence term as opposed to three years, and note that there is no mention of expectation of renewal or criteria to be used for renewal.

Q36 ISED is seeking comments on its proposal to allow broadband use in the 900 MHz LMR band as shown in figure 6.

95. We support this proposal.

96. However, we urge ISED to align with the US changes to 900 MHz LMR band plan, so that broadband is available in all parts of Canada (ISED para 117).

Q37 ISED is seeking comments on its proposal to issue access radio licenses in the 897.5-900.5 MHz and 936.5-939.5 MHz portions of the 900 MHz LMR band in rural and remote

Tier 5 service areas and only in locations within those service areas where there will be no interference to existing LMR operations.

97. In general, we support this proposal.

Q38 ISED is seeking comments on availability of equipment for the proposed broadband service, including the feasibility of modifying 3GPP band 8 equipment.

98. We have no comment at this time.

Q39 ISED is seeking comments on the potential use cases of 3/3 MHz for broadband services, including the potential for 5G deployment.

99. We prefer 5/5 MHz, noting that ISED states that it "recognizes that a 3/3 MHz broadband segment is likely not enough to achieve CRTC's universal broadband service objective of 50/10 Mbps for public consumers" (para 114).

Q40 ISED is seeking comments on the feasibility of also making 896-901 MHz and 941-946 MHz available for broadband at the same time as 987.5-900.5 MHz and 936.5-939.5 MHz

100.   We support this proposal.

Q41 ISED is seeking comments on its proposal to use the same methodology for determining geographic separation for broadband service as already included in SRSP-506 for land mobile systems.

101.   We have no comment at this time.

Q42 ISED is seeking comments on whether the 1.5 MHz and 500 kHz of separation are sufficient to protect the adjacent band Air-Ground Radiotelephone Service, fixed service and Narrowband Personal Communications Service.

102.   We have no comment at this time.

Q43 ISED is seeking comments on the potential or actual benefits of subordinate licensing to increase rural broadband access and accommodating new innovative network usage.

103.   Subordinate licensing is an important policy mechanism for rural, remote, Northern and Indigenous regions. FMCC member organizations ECN and K-Net already have subordinate licensing arrangements in place. K-Net Mobile provides mobile phone services in 15 rural/remote First Nations in Northern Ontario through a subordinate licensing agreement

with Rogers.[18] This arrangement has resulted in a number of innovative uses of mobile technologies in First Nations contexts, such as the DiabeTEXTs initiative from KO Health and K-Net to use cellular technology to provide diabetes education and information to interested community members through SMS texting and other electronic media.[19] ECN works with SSi Canada, which holds a subordinate licence and has partnered with Eeyou Mobility Inc (EMI) to implement infrastructure and provide cell service in the Eeyou Istchee region.

Q44 ISED is seeking comments on ways in which to streamline the general application requirements for subordinate licences as set out in sections 5.6.3 and annex D of CPC-2-1-23. ISED also seeks proposals to streamline the application process for all subordinate licence applicants, including those in commercial mobile bands who must also provide material addressing the criteria and considerations in section 5.6.4 of CPC-2-1-23. In these proposals, ISED also seeks comments as to how parties can demonstrate (e.g., an attestation, or other commitment) that their request for a subordinate licence does not constitute a transfer, deemed transfer, or prospective transfer as discussed in section 8.2.1 above.

104.   We support efforts by ISED to clarify and streamline the application process for subordinate licences.

105.   Indigenous groups have raised this challenge in prior consultations. For example, in CRTC 2019-406, the Inuvialuit Regional Corporation (IRC) stated that the existing spectrum management regime imposes onerous, impractical conditions for sub licensing unused spectrum. During those proceedings, we agreed with IRC's recommendation that the CRTC (working in collaboration with ISED) should require spectrum licensees to sublicense unused spectrum at reasonable terms.

106.   The 2018 report of the Auditor General of Canada has also noted the challenges with the existing market for subordinate licenses. These included limited information on unused spectrum and the lack of a clear, user-friendly process for applicants.[20]

Q45 ISED is seeking comments on facilitating subordinate licensing and encouraging secondary market transactions including:
- *Should additional changes be made to existing licences that will encourage the use of subordinate licences as a means to help deploy more services?*
- *Given ISED's regulatory role, are there any issues or actions ISED should consider?*

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[18] See: https://mobile.knet.ca/node/464

[19] See: https://cjc-online.ca/index.php/journal/article/view/2488/2276

[20] Auditor General report, sec. 1.78-1.81.

107.   ISED should encourage and facilitate subordinate licensing. Subordinate spectrum licensing agreements support principles of economic reconciliation and partnership between Indigenous and non-Indigenous entities. Spectrum license holders should consider how they might support the ongoing economic and community development of Indigenous Nations through spectrum-sharing agreements, including by supporting and encouraging subordinate licenses. Examples of successful partnerships exist, as in the cases of K-Net Mobile and Eeyou Mobility Inc's work with SSi Canada.

108.   We also propose that there should be incentives for existing licence holders to share spectrum with Indigenous providers.

109.   Concerning the examples in para 149, we propose that ISED should:
- establish timelines and deadlines for a licensee to respond to a request to enter into a subordinate agreement;
- require that the Primary Licensee provide valid reasons for refusing to enter into a subordinate arrangement (e.g. an imminently planned deployment);
- establish potential consequences ranging from fines to forfeiture of licences for failing to respond to a request.

Q46 ISED seeks comments on what additional information, if any, should be included in the draft form shown in annex D.

110.   We have no comment at this time.

TVWS & RRBS

Q47 ISED is seeking comments on its proposal to remove the current restriction on database hosting in order to facilitate cloud-based database hosting solutions.

111.   We support this proposal.

Q48 ISED is seeking comments on its proposal to allow the use of TV channels 3 and 4 by all types of WSD.

112.   In general, we support this proposal. However, we would expect any provider serving an Indigenous community to determine whether use of these frequencies would interfere with TV reception, connections with VCRs, etc.

Q49 ISED is seeking comments on its proposal to no longer renew existing RRBS licences after March 31, 2027.

113.   We support this proposal.

V. Conclusion

114.   We thank ISED for the opportunity to contribute to this important consultation.

115.   We reserve the right to submit Reply Comments including additions and modifications to the responses above during the next phase of the proceedings and any other phases that may be authorized.

*** END OF DOCUMENT ***

26 October 2021

Innovation, Science and Economic Development Canada
Senior Director, Regulatory Policy, Spectrum Licensing Branch
235 Queen Street (6th Floor, East Tower)
Ottawa, ON K1A 0H5

RE: SLPB-004-21: Consultation on New Access Licensing Framework, Changes to Subordinate Licensing and White Space to Support Rural and Remote Deployment

To Whom It May Concern:

In accordance with the process established by SLPB-004-21: Consultation on New Access Licensing Framework, Changes to Subordinate Licensing and White Space to Support Rural and Remote Deployment dated 4 August 2021, the First Mile Connectivity Consortium (FMCC) files the enclosed Comments.

The FMCC is an independent, incorporated not-for-profit national association, whose members are First Nation Internet service providers known as "community/regional intermediary organizations." Our member organizations provide and support the delivery of broadband-enabled public services such as online education and telehealth, as well as entertainment services for household consumers. Our work focuses on innovative solutions to digital infrastructure and services with and in rural and remote regions and communities across Canada. More details about our members and activities are available at: http://firstmile.ca .

In the attached intervention, the FMCC represents the following First Nations organizations, (listed geographically from the Western to the Eastern regions of Canada):

- First Nations Technology Council (B.C.)
- First Nations Technical Services Advisory Group (Alberta)
- Clear Sky Connections (Manitoba)
- Broadband Communications North (Manitoba)
- Keewaytinook Okimakanak K-Net Services (Ontario)
- Western James Bay Telecom Network (Ontario)
- Matawa First Nations Management (Ontario)
- First Nations Education Council (Quebec)
- Eeyou Communications Network (Quebec)
- Atlantic Canada's First Nations Help Desk (Atlantic Canada)

Please find attached our Comments regarding **SLPB-004-21**, in response to the Notice of Consultation.

Sincerely,

Rob McMahon, Coordinator
First Mile Connectivity Consortium
info@firstmile.ca

October 25, 2021

Ms. Sarah O'Brien
Director, Broadcast, Coordination and Planning
Spectrum Management Operations Branch
Innovation, Science and Economic Development (ISED) Canada
235 Queen Street (6th Floor)
Ottawa, Ontario K1A OH5
Email: sarah.obrien@ised-isde.gc.ca

Subject: Consultation on New Access Licensing Framework, Changes to Subordinate Licensing and White Space to Support Rural and Remote Deployment (August 2021) – Comments

Dear Ms. Perron,

Forest Products Association of Canada (FPAC) is the voice for Canada's wood, pulp, paper, and wood-based bioproducts producers nationally and internationally in government, trade, and environmental affairs.

Canada's forest products industry represents 2% of Canada's GDP, is an $80 billion dollar sector and is one of our country's largest employers. We directly employ 230,000 Canadians across over 600 communities and indirectly support another nearly 700,000 Canadian jobs. The majority of our sector's operations are located in northern, rural, and remote areas of the country.

I would be remiss in our submission if I did not highlight the important relationship that exists between Canada's forests and Indigenous peoples. Today, 10% of Canada's wood supply is directly managed by Indigenous communities, the sector is home to over 1,400 Indigenous-owned forestry businesses, and nearly 12,000 Indigenous workers are employed in forestry businesses across Canada. In short, Canada's forest sector is in a leading position to advance economic reconciliation with Indigenous peoples. Our ability to deliver on that promise will be significantly improved by expanding access to broadband in our rural and remote communities.

Approximately 690 million hectares of Canada's land base is still unconnected. Currently, forest operations are conducted in remote locations without access or with very limited access to communications including the internet - there are no mobile cellular networks that can be easily and cost-effectively deployed in forest operations. Simply put, inadequate connectivity in remote forest operations prevents timely flow of information between forest operations and data centres

in town. It also stalls economic growth opportunities, challenges the recruitment of talent and their families, and puts human and community safety at risk.

The satellite communication currently used is quite slow. Sadly, internet connections are unreliable, if existent at all. We are increasingly concerned about the safety of forest sector workers and their families and neighbours in unconnected communities. This safety concern is even greater in the face of more catastrophic fire patterns we are seeing across Canada's boreal forest because of climate change.

As we work together to drive a green, inclusive, and lasting post-pandemic economic recovery, the digital transformation of Canada's forest sector with implementation of Forestry 4.0 initiatives is a top priority. We need to bring the internet to the forest and forestry communities in an effective and cost-competitive way.

This enhanced communication technology is essential to increase safety of remote workers and wildfire first responders, gain valuable insights on equipment, and decrease downtime related to maintenance and the inefficiencies of operating in isolated areas. As accelerating the pace of economic reconciliation with Indigenous peoples and building the talent pipeline of tomorrow are two of our sector's top priorities, having access to reliable connectivity will be essential to achieving our goals. This would enable the activation of new innovations and technologies including tele-operation of forest machines and autonomous forest machines. Connectivity is backbone of digital transformation and digitalization. No connectivity means no innovation. It also means these rural and remote communities will be challenged to grow economic opportunities for their people.

We welcome this consultation so we can unleash innovation and economic growth potential by increasing the availability of spectrum to rural and remote areas. We greatly appreciate ISED's commitment to promote the delivery of broadband services to rural and remote areas across the country and the commitment to a national target of all Canadians having access to at least 50/10 Mbps. That would support improved mobile coverage and enable the economic development of rural and remote areas.

Now that I have set the stage, I offer more specific comments in three areas:

1. **Streamline Subordinate Licensing Approvals**

    - Large mining sites have set up similar networks, however, they are not mobile. Forest operations are dynamic in nature as the operation does not operate in each area for that long.
    - The operational activities move from one harvesting site to another in a short period of time; therefore, the capability to move the communication tower to different locations with ease is a real barrier.

- Once harvesting is finished, we no longer require retaining the license for that area, so industry could release the license for that area, but would need the license for he next harvesting area. Sometimes due to shut down, the operation might temporarily halt and resume later. Therefore, there should be some flexibility incorporated in the license approval process and the acquisition of private broadband connectivity licenses must be simpler.
- Spectrum approval for the forest sector could be done through dynamic spectrum allocation.
- The certification of the user equipment devices for operating in certain frequencies also needs to be streamlined. The certification process needs to be expedited to enable faster implementation of communication systems under approved frequency use.

2. Greater Use of Licenses to Increase Use of Spectrum

- We truly appreciate the move to 'use it or lose it'. This shift will help our industry implement new technologies, for which the forest industry needs access to frequency (preferably lower frequency in 450, 600 (band 71), 700 (band 12, 13, & 14) or 800 (band 5) MHz bands that will work in a highly vegetated environment) to bring digital transformation into the industry and remain globally competitive. We strongly support the subordinate licensing process as an integral part of a dynamic secondary market.
- Connectivity is backbone of digital transformation and digitalization. Industries in other countries have government support with unlicensed LTE bands such as Citizens Broadband Radio Service (CBRS) for Industry 4.0 technology deployment; therefore, we would like to see a similar support in Canada with access to frequency for the resource sector with the low-cost model. Setting up a communication platform with the primary license(s) would make the subordination license process much easier and more streamlined. The subordinate licensing process needs to consider the complexity of forest operations, including that we operate in multiple provinces and have multiple companies operating in the same areas. Having the provision for spectrum sharing and co-subordinate licensing would be hugely helpful. In addition, providing a tool that uses spatial information for frequency management will be beneficial for both spectrum licensing and the management process.
- The forest industry needs access to unlicensed or low-cost licensed LTE bands for connectivity.
- To implement the cellular connectivity, the existing phones and telematic devices need to work with approved frequency. For the forest industry, band 5, 12, and 13 will work with their existing telematics. New phones and devices are or will be supporting Band 14, so the forest industry could also put this band to use.

3. **Improvements to White Space Rules and Changes to the Rural Remote Broadband System (RRBS) Policy Framework**

- We welcome the proposed move of the TVWS database to a cloud-based database and the phasing out of RRBS licenses to allow White Space Device (WSD) technologies to bring the internet to rural and remote areas.
- We recommend you consider allowing band 14 (746 to 806 MHz frequency band) for the natural resource sector's use through the spectrum sharing policy. Band 14 in Canada is mostly unused. The forest industry works closely with wildfire agencies in detecting and fighting forest fires. During emergencies, we work as one team. Therefore, providing access to band 14 frequency 750 MHz would be a win-win situation for both wildfire agencies and the forest sector – not to mention affected communities and residents.
- We also recommend you consider spectrum in 600 MHz for the use of Vehicle-to-Everything (V2X) in the natural resource sector to improve resource road safety. Canada has a vast and complex road network with more than 80% unpaved roads. Currently we are using VHF with push-to-talk radio for communicating vehicle locations on resource roads for safety. Human health and safety could be enhanced with upcoming V2X technology, however long-range communication will be required on these roads as the V2X radios in 5.9 GHz does not fully meet our current needs.

Thank you for your interest in our comments. We remain ready and willing to work with you and our partners across the country to realize improvements and seize this opportunity for all.

Sincerely and with my best wishes,

Derek Nighbor
President and CEO

Comments for:

**Consultation on New Access Licensing Framework, Changes to
Subordinate Licensing and White Space to Support Rural and
Remote Deployment**

SLPB-004-21

August 2021

Spectrum Management and Telecommunications

26 October 2021

Contents

1. Introduction

1. The Independent Telecommunications Providers Association (ITPA) is a non-profit organization that represents Independent Local Exchange Carriers in Ontario, British Columbia, and Quebec to governments, their various agencies and other industry players.

2. Currently the ITPA represents twenty-one independent local exchange carriers that together serve over 180,000 access lines – principally in rural areas of Ontario, British Columbia, and Quebec.

3. The ITPA's role is to assist its members to successfully provide state-of-the-art telecommunications services to the benefit of their customers and represent the interests of SILECs from Ontario, British Columbia, and Quebec and acts as a forum for the sharing of expertise between member companies.

4. ITPA members have been providing innovative, affordable, and personalized communications services to rural Canadians for over 100 years and thus have been instrumental to the fulfilment of policy objectives of ISED and its precursor ministry (Department of Communications).

5. ITPA members as TEL-area licensees, have held cellular licences in their ILEC areas since the original award by the Department of Communications in 1982. Subsequently in 1995, ITPA members also received PCS licences. ITPA members have put the spectrum to use, either directly or through subordination agreements with larger Mobile Network Operators (MNO)s.

6. ITPA members are committed to continue providing their rural subscribers with innovative, affordable services in the 21st century and respectfully request that ISED consider the impact of its policies on industry stakeholders, including small players who have been contributing to the fulfilment of ISED's policy objectives. ITPA notes that ISED's policy frameworks are increasingly referenced by the Canadian Radio-television and Telecommunications Commission (CRTC) which has similar key policy objectives: increasing connectivity to rural Canadian, bridging the urban/rural digital divide and enabling access to emerging services and technologies for the benefits of Canadian consumers.

7. ITPA believes in the importance of aligning policies between ISED and the CRTC to ensure there are no policy gaps which would jeopardize the viability of smaller rural service providers and correspondingly, their ability to provide services to their subscribers.

8. ITPA submits that broadband wireless service providers - both mobile and fixed, require ISED to make available a significant additional quantity of affordable, secure spectrum to enable delivery of high quality, reliable services consumers are expecting. These measures are also necessary to address the fact that spectrum is a significant barrier to entry to the Canadian wireless industry. To that effect, ITPA applauds ISED's initiative to consider a new access licencing framework that will make unused spectrum available in rural and

remote areas, as its members increasingly need spectrum to deliver on their commitment to provide innovative and affordable wireless services to Canadian consumers.

2. International best practices/ the situation in other jurisdictions

9. ITPA's research on international best practices in spectrum management from other jurisdictions reveals that ISED is a leader among regulators of advanced economies in relation to both the level of sophistication of deployment requirements of spectrum licences and the implementation of new policies aimed at promoting the utilisation of unused spectrum resources.

10. The new Access Spectrum Licencing Framework proposed by ISED through this Consultation, wherein unused Cellular and PCS spectrum in rural and remote areas would become available to other entities, is innovative, as shown by the ITPA's research of regulators' activity in other trend setting jurisdictions.

11. In the US, the FCC adopted rules for the commercial use of the CBRS band in 2015 using a 3-Tier approach, completing a process which began in 2012[1]:

    - Tier 1 of the CBRS licencing framework reserves spectrum for incumbent use, namely military's US Navy radar systems,
    - Tier 2 defines Priority Access Licences (PAL) which were auctioned during the summer of 2020 (FCC Auction 105) and,
    - Tier 3 allows unused spectrum to be accessed through General Authorisation Access (GAA).

    As the PAL licences from auction 105 were finally awarded in March 2021,[2] it is still unclear how many GAA licences will result from this process. The ITPA believes that this 9-year "struggle" the FCC had giving birth to a spectrum sharing framework in this first spectrum band demonstrates how complex and difficult it is for regulators to establish and promote efficient spectrum sharing mechanisms.

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[1] https://www.fcc.gov/35-ghz-band-overview

[2] https://www.fcc.gov/document/fcc-announces-first-priority-access-licenses-grants-35-ghz-band

12. In the UK, Ofcom introduced a new local licensing approach in 2019, where it made unused spectrum in the 3.8-4.2 GHz, 1800 MHz and 2300 MHz bands available.[3] Entities can apply on a first come first served basis to Ofcom for coordinated access, which ensures they won't cause interference to existing systems. For simplicity and ease of access, Ofcom aligned the authorisation approach for local licensing of the new shared access bands with an existing authorisation approach. Spectrum available through this framework was already licensed to mobile operators, but it is not being used or planned for use in a particular area within the next three years. ITPA sees similarities between the underlying principles of Ofcom's local licencing approach and ISED's proposed Access Spectrum licensing Framework.

13. In Australia, ACMA conducted a consultation on "new approaches to spectrum sharing" in the fall of 2019, through which the authority was looking at emerging opportunities for non-traditional shared access and considering how regulation might facilitate new spectrum sharing opportunities. Following the Consultation, ACMA published its "New approaches to spectrum sharing—Next steps" paper in May 2020,[4] where it indicated its openness to supporting industry-led trials of non-traditional spectrum sharing arrangements such as dynamic spectrum access (DSA). Specifically, the authority is looking for detailed proposals from industry that that set out key trial parameters such as:
    • proposed spectrum bands
    • operating conditions, including Tiering arrangements and how the sharing framework would operate
    • details on the financial costs of a trial and which parties would contribute to these costs
    • the benefits and potential business cases that such a trial might inform
    • what future demand for these types of arrangements might ultimately present
    • the potential impact on incumbent services, including any additional licensing or operating constraints that might result from shared access.

14. ACMA' consultative approach to spectrum sharing has not yet resulted in a licensing framework as sophisticated as what Ofcom established in 2019 or ISED is proposing through this Consultation.

15. Understanding how difficult it has been for regulators of advanced economies to promote efficient spectrum sharing mechanisms, ITPA submits that for ISED is to succeed in the design of an effective licensing framework for unused spectrum, it will need to carefully consider issues such as eligibility, determination of what constitutes 'unused' spectrum,

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[3] https://www.ofcom.org.uk/__data/assets/pdf_file/0033/157884/enabling-wireless-innovation-through-local-licensing.pdf

[4] https://www.acma.gov.au/consultations/2019-10/new-approaches-spectrum-sharing-consultation-252019#outcome

deployment requirements and coordination with other regulatory agencies with similar policy objectives.

3. Access to spectrum in Canada and ITPA stance on current ISED efforts

16. At paragraph 26 of the Consultation document, ISED lists its recent efforts to promote spectrum sharing in Canada – ranging from allowing terrestrial mobile and fixed services to share the mmWave band with fixed satellite service and introducing the flexible use concept to a variety of spectrum bands, to developing the technical and policy framework for white space.

17. ITPA notes the various approaches listed by ISED in the Consultation document are evolutionary in nature, and although each of them was a step in the right direction to help the cause of spectrum sharing, none of these initiatives is revolutionary in and of itself. None of those proved to be a giant step, an enabler at improving connectivity to rural Canadians and bridging the urban/rural digital divide.

18. ITPA submits that ISED's most notable success in terms of spectrum sharing initiative to date has been the introduction of an the 'all come all served' licensing framework in the 3.65 GHz band in 2009, through the release of its SP 3650 MHz - Spectrum Utilization Policy, Technical and Licensing Requirements for Wireless Broadband Services (WBS) in the Band 3650-3700 MHz.[5] The overlap with the CBRS band in the US and the availability of a 3GPP ecosystem over LTE band 43, allowed small Internet Service Providers across the country to make use of the band in rural areas in the deployment of fixed wireless internet service.

19. ITPA submits that certain ISED initiatives have actually hindered the deployment of connectivity in rural and remote areas of Canada. For example, the recent 3500 MHz spectrum auction held by ISED in June 2021, resulted in the highest auction price paid globally for the 3500 MHz band, at (CDN $2.28/MHz/Pop) and total proceeds in excess of $8.9B CDN for the entire country. While prices paid varied considerably among metro, urban, rural and remote areas, in most cases smaller service providers were not able to obtain affordable spectrum which would enable them to improve services to their subscribers at affordable prices.

20. ITPA submits that in order for ISED to achieve its policy objective of improving connectivity and facilitating the deployment and timely availability of services in rural and remote areas, it must give additional consideration to affordability of spectrum, propagation

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[5] https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf09540.html

characteristics of the band made available and availability of a commercial ecosystem (preferably standard based). Correspondingly, integration of these measures in the new Access Framework would foster investment and the evolution of wireless networks by enabling the development of innovative and emerging applications and support sustained competition in the provision of wireless services so that consumers and businesses benefit from greater choice and competitive prices.

21. ITPA applauds ISED's current effort to establish a new Access Spectrum Licencing framework for unused spectrum and hopes the elements necessary to make it effective in the accomplishment of its policy objectives are given due consideration by ISED.

22. ITPA encourages ISED to consider the connectivity challenges specific to rural and remote regions of Canada and consequently implement additional measures to assist smaller service providers to bridge the digital divide and ensure all Canadians have access to broadband services (fixed or mobile). ITPA applauds ISED's new Access Spectrum Licensing regime for the benefit of rural Canadians.

4. Comments on ISED's specific questions
(NB: Section numbering matches the ISED consultation document from here for convenience of reference.)

5. Access Licensing framework

Q1 ISED is seeking comments on its proposal to implement a new Access Licensing framework to make licences available in rural and remote areas where there is unused spectrum.

23. ITPA supports ISED's proposal to implement a new Access Licensing framework to make licences available in rural and remote areas where there is unused spectrum, subject to consideration of the points raised in the remainder of this document.

5.1 Access licensing approach

Q2 ISED is seeking comments on its proposal to issue access spectrum licences and access radio licences on a first-come, first-served basis.

24. ITPA is not opposed to ISED's proposal to issue access spectrum licences and access radio licences on a first-come, first-served basis (FCFS). However, ITPA believes that demand significantly exceeds the number of licences available in certain areas.

25. ITPA submits that ISED should register all spectrum demands in a given licence area in the first month of posting of availability for a given band under the new Access Spectrum Licencing Framework and subsequently assign the spectrum based on a scoring system -

based on current spectrum holdings and use, rather than simply which applicant sent the request first to obtain a 'clock stamp'.

26. For example, under this approach an entity asking for 800 MHz cellular spectrum in a Tier 5 area where it already sits on over 20+20 MHz on undeployed mobile/flexible use low band spectrum (600 MHz, 700 MHz, or other 800 MHz blocks) would score a lower priority than another entity who has no low band spectrum or sits on less than 20+20 MHz of undeployed spectrum.

27. Similar criteria could be established for PCS spectrum, comparing it with AWS-1, AWS-3 or other bands of similar propagation characteristics.

28. In the eventuality that after the first month of the new Access Spectrum licencing regime no applicants in a given Tier 5 licence area have requested spectrum, ISED could revert to the FCFS basis to grant spectrum licences.

5.2 Areas where access licences will be available

Q3 ISED is seeking comments on its proposal to use the rural and remote Tier 5 service areas as the basis to determine the rural and remote areas in which it will apply access licensing.

29. ITPA submits that access to unused spectrum at the Tier 5 level makes sense. Tier 5 as the basis for licensing better reflects the differences in subscribers and costs among metro, urban, rural and remote areas, in so far that a given Tier 5 can only belong to one of the four categories.

30. However, ITPA notes that given the relatively small size of Tier 5 areas, it is possible that a spectrum holder providing service in a given Tier 5 area could meet its deployment conditions without any towers being built within the boundaries of the Tier 5 area. This is especially true for low band spectrum.

31. ITPA believes that in the determination of whether spectrum should be made available in a given Tier 5 area, ISED needs to consider coverage of existing licensees at the specific frequency band of interest, rather than purely relying on site location.

32. ITPA submits that ISED's careful consideration on the question of determining where spectrum is actually unused and therefore available, will reduce coordination requirements between licensees, avoid compromising their deployment plans and minimize ISED's administrative burden in dealing with complaints from spectrum holders.

33. ITPA also notes that while the site licence data from ISED's website is typically accurate with regards larger wireless service providers, similar data regarding smaller service providers' data could be less accurate as they do not necessarily have the same resources available to maintain ISED SMS site licence data.

34. ITPA urges ISED to remind existing spectrum holders, especially the smaller ones, of the importance of maintaining accurate site data information in ISED's Spectrum Management System to ensure licences are not awarded spectrum through the new Access Spectrum Licencing Framework in Tier 5 areas where current spectrum holders are already using the spectrum.

35. ITPA recognizes that the requirement to update ISED with spectrum licence site data is not new for licence holders. However, with data to be used in the determination of whether spectrum is available to other entities, the consequences of falling behind on updates will be even more important.

5.3 Principles for identifying bands for access licensing

Q4 ISED is seeking comments on its proposed principles to be used when considering spectrum licensed or radio licensed bands where the proposed Access Licensing framework will apply.

36. At first glance ITPA agrees with the principles listed by ISED, that is, for identifying bands for availability, considering those that have:

- the potential to support wireless broadband, private networks, and/or industry vertical use cases

- an existing licensing framework for flexible or mobile use

- an available or clear path to an available equipment ecosystem

- sufficient amounts of unused spectrum in rural and remote areas

- the potential for coexistence between existing users and potential access licensees

- had adequate time for existing licensees to deploy (e.g. initial licence term has lapsed), or time permitted to meet initial deployment requirement has lapsed in the case of bands that were auctioned)

37. However, ITPA notes that ISED's criteria, when scrutinised, are not as extensive as it first appears and that several criteria are strongly correlated and could be regrouped into the same criteria.

38. For example, ITPA submits that the criteria ''the potential to support wireless broadband, private networks and/or industry vertical use cases'' and ''an available or clear path to an available equipment ecosystem'' could be regrouped into one criterion, as the potential to support wireless broadband depends on the availability of an ecosystem.

39. ITPA further argues that the existence of a licencing framework for flexible or mobile use is also strongly correlated to the existence of a viable ecosystem. Consequently, ITPA suggests that ISED consider those 3 criteria to be in fact one and the same.

40. Ecosystems also evolve over time. ITPA submits that ISED should consider undertaking periodic assessments in order to ensure than the criterion does not lead to the exclusion of

spectrum that could have been made accessible with new technologies and commercial ecosystems.

41. Additionally, the criteria related to sufficiency in the amount of unused spectrum in rural and remote areas is vague and could lead to discriminatory decisions. ITPA is of the opinion that it is the applicant that should make the initial determination of whether the amount of unused spectrum is sufficient for the application it contemplates, rather than an arbitrary decision from the regulator to the effect that there is not enough unused spectrum available of one band in a given area for the spectrum to be considered under the new Access Spectrum Licencing Framework. In this case, ISED would still ratify the applicant's determination of spectrum sufficiency as part of the application process.

42. ITPA therefore submits that the bandwidth of unused spectrum available is not a valid reason to exclude a spectrum band or spectrum blocks, as long as the relevant commercial ecosystem supports the bandwidth available (e.g. IoT applications are functional with only 1.4 MHz of 4G LTE spectrum).

43. ITPA also believes that the potential coexistence criterion needs to be clearly defined by ISED, in order to ensure incumbent licence holders cannot unreasonably use it to force the Regulator to reject applications.

44. Finally, ITPA respectfully submits that ISED should consider the impacts of the decision to make spectrum available on other concurrent policies, whether ISED's or another regulator, before unused spectrum is made available to other entities through a new licensing regime. For example, the CRTC, in Telecom Review Policy 2021-130, defines eligibility to the new MVNO regime through a spectrum ownership criterion.[6] ITPA urges ISED to take into consideration the fact that the CRTC has allowed seven years to eligible participants in its MVNO regime to build their own Radio Access Network (RAN) before making any of their unused spectrum available to other entities in their MVNO eligibility area.

Q5 ISED is seeking comments on other principles it should take into account when considering bands where the proposed Access Licensing framework will apply.

45. ITPA submits that it is important that ISED grants spectrum holders sufficient time to deploy their networks and meet their deployment conditions before spectrum is made available to other entities. As such, ITPA submits that newly awarded licences should not be deemed available through the Access Spectrum Licencing Framework.

46. As the spectrum the new licencing regime considers unused spectrum is in rural and remote areas only, better propagation characteristics are desirable. ITPA therefore believes that favorable propagation characteristics should certainly be taken into account when considering bands where the proposed Access Licensing framework will apply.

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[6] https://crtc.gc.ca/eng/archive/2021/2021-130.htm par.316

47. Situations where a large number of primary licence holders are in breach of deployment conditions for a specific band could also be considered by the regulator.

48. ITPA submits that at the new Access Spectrum Licencing framework should include a notification period for existing licensees, both primary and subordinate, before spectrum is awarded to an applicant, to ensure that existing licensees are not already in the process of building infrastructure and expanding service.

49. ITPA believes that in this phase of the new access licensing process, existing licensees should be required to provide concrete evidence to ISED, such as the public notifications that are part of ISED's site authorisation process or evidence of construction work, site surveys, etc. to demonstrate that they are in the process of expanding service.

50. ITPA submits that deployment plans need to be more advanced than mere radio coverage maps or even evidence of site leasing activities as those are easy to produce and existing licensees could use them to 'game the system' and delay spectrum awards. Existing licensees should also be required to use the spectrum within 18 months and to complete construction and provision of service to subscribers in the case where the evidence provided was accepted by ISED for use of the designated spectrum. ITPA believes an 18 month period would be sufficient in this case as existing licensees would have demonstrated they had real plans underway.

51. ITPA submits that ISED should also take consideration the fact that Cellular and PCS spectrum might have been subordinated through commercial agreements that did not consider deployment requirements. Primary spectrum holders should be given sufficient notice that new deployment conditions will apply henceforth to this spectrum in order that the licensee has the opportunity to amend agreements with the entities to which they subordinated the spectrum.

52. ITPA notes that ISED is crafting a new Access Spectrum licencing framework to make available unused rural and remote spectrum without any consideration of the fact that the CRTC, in TRP-2021-130, established spectrum ownership at the Tier 4 level or higher as an eligibility criterion for the MVNO regime.

53. ITPA believes there is a real risk of a policy gap if the implications of the CRTC's new MVNO regime are overlooked by ISED. For instance, a service provider could be in the middle of implementing an MVNO operation in a given Tier 4, when suddenly another entity applies for an unused Tier 5 licence within the Tier 4 and obtains it from ISED. Because the service provider no longer holds spectrum in the entire Tier 4 level, it would lose its eligibility to the CRTC MVNO tariff in the Tier 4. This assumes that CRTC applies the interpretation proposed by the incumbent MNOs that the definition of spectrum ownership is based on defined at a Tier 4 - or higher, level and the Tier 4 spectrum must be held by an MVNO candidate for the entire Tier 4 where it wishes to access the MVNO tariff, regardless of spectrum ownership in other Tier 4 areas.

54. ITPA believes coordination between ISED and CRTC policies is important to the success of both ISED's new Access Spectrum Licencing regime and of service providers serving rural and remote communities.

6. Process for access spectrum licences

6.1 Flexible use for access spectrum licences

Q6 ISED is seeking comments on adopting a flexible use licensing model for fixed and mobile services when issuing access spectrum licences.

55. ITPA supports the adoption of flexible use licencing when issuing access spectrum licences.

6.2 Licence areas for access spectrum licences

Q7 ISED is seeking comments on its proposal to use Tier 5 service areas for the proposed access spectrum licences and any associated potential technical challenges should this process be applied to all commercial mobile or flexible use frequency bands.

56. ITPA supports ISED's proposal to use Tier 5 service areas for the proposed access spectrum licences but notes that specific applications for private LTE or 5G systems might even require smaller licence areas than Tier 5. For instance, a 30Km radius around the central point of an open pit mine would be sufficient in most cases, - even when low band spectrum is used - allowing for spectrum to be used for other commercial purposes in the remainder of the Tier 5 area. This is particularly true in remote areas, where Tier 5 service areas are generally larger.

57. ITPA also notes that, although radio spectrum propagation does not stop at the border of Tier 5 area, techniques to contain signal within a given Tier 5 area (antenna site localisation, lower above ground antenna placement, antenna tilt, lower transmit power, utilisation of higher frequencies) exist and should be encouraged/mandated by ISED to ensure existing radio systems are protected.

58. ITPA submits that available spectrum bands should be listed separately. For example, the merging of Cellular and PCS bands into the same table where the number of available blocks is considered jointly for both bands (re. Appendix C of the consultation document) does not provide enough clarity on what is available given the different propagation characteristics of both bands. ITPA therefore submits that such availability tables should be built on a per band basis.

Q8 ISED is seeking comments on any future adjustments to the licence areas for access spectrum licences, including consideration of more localized areas (e.g. smaller than Tier 5).

59. As noted in its answer to Q7, ITPA submits that private systems that do not require an access spectrum licence for an entire Tier 5 licence should only be given a licence for the area they require.

Q9 ISED is seeking comments on its proposed process for identifying rural and remote Tier 5 service areas in which there is unused spectrum that would be made available for access spectrum licensing.

60. ITPA support ISED's proposal to use the site data obtained from its Spectrum Management System (SMS) for a preliminary identification of rural and remote Tier 5 service areas where there is unused spectrum that could be made available for access spectrum licensing.

61. However, as stated in a previous section and recognised by ISED in the consultation document, ITPA submits that the use of ISED Spectrum Management System site licence data needs to be complemented with propagation analysis of systems in surrounding Tier 5 areas using the proposed spectrum block before spectrum is deemed available. As previously stated, it is sometimes possible for a licence holder to cover the population of a given Tier 5 area without deploying sites within the geographical boundaries of the Tier 5, when sites are located close to the border and propagation characteristics are favorable.

6.3 Treatment of existing spectrum licences

Q10 ISED is seeking comments on its proposal to impose a condition of licence to prohibit existing primary and subordinate licensees' deployment in areas for which an access spectrum licence has been issued.

62. ITPA supports ISED's proposal to impose a condition of licence to prohibit existing primary and subordinate licensees' deployment in areas for which an access spectrum licence has been issued.

Q11 ISED is seeking comments on its proposal that stations already deployed by primary or subordinate spectrum licensees within their service areas would be protected from subsequent deployment under access spectrum licences.

63. ITPA supports ISED's proposal that stations already deployed by primary or subordinate spectrum licensees within their service areas would be protected from subsequent deployment under access spectrum licences.

6.4 Eligibility

Q12 ISED is seeking comments on the options considered for eligibility.

Option 1, in order to be eligible for an access spectrum licence, at the time of application, an applicant must not hold a spectrum licence for undeployed commercial mobile, fixed, or flexible use spectrum, in the same Tier 5 licence area as the area for which it is seeking an access spectrum licence.

Option 2, in order to be eligible for an access spectrum licence, at the time of application, an applicant must not hold a spectrum licence, whether deployed or undeployed, for commercial mobile, fixed, or flexible use spectrum, in the same Tier 5 licence area as the area for which it is seeking an access spectrum licence.

64. ITPA submits that well thought-out eligibility criteria for the new licensing regime constitutes the single most important aspect leading to its success or failure.

65. ITPA further submits that both options are in contradiction of ISED's policy objective, that are in the context of this consultation, to:

    • Facilitate the deployment and timely availability of services across the country, with an emphasis on rural and remote regions

    • Foster investment and the evolution of wireless networks by enabling the development of innovative and emerging applications

    • Support sustained competition in the provision of wireless services so that consumers and businesses benefit from greater choice and competitive prices

66. For instance, it is entirely possible for a wireless service provider to hold undeployed spectrum in a given Tier 5 area because the quantity of spectrum held is insufficient to support a successful deployment of services in an area, but that when combined with additional spectrum underutilized by another entity, the project becomes viable and the service provider can proceed with the deployment of services in the area.

67. It is also entirely possible that a wireless service provider has already deployed service in a given area, but that the amount of spectrum owned by the service provider does not allow it to provide the services featuring download speeds or capacity that end users expect. In such case, by accessing spectrum underutilised by another entity, the service provider would then have the possibility of improving the quality of service offered to its end users in an affordable manner, fostering better connectivity in line with ISED's policy objectives.

68. ITPA submits that what ISED needs to carefully consider is not the spectrum holdings of applicants (deployed or undeployed) but rather measures to prevent spectrum hoarding through its new Spectrum Access Licencing Framework.

69. For instance, ITPA submits that entities should lose the spectrum and not be allowed to ask for it again for at least 12 months if spectrum acquired through the Access Spectrum

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Licencing process has not been put to use within 24 months of the award. The Access Spectrum licensing system should make both awards and reclamations of spectrum public and easily accessible to all.

70. Provisions should also be implemented to prevent large spectrum holders from gaming the system. For example, Operator A and B both own underused 850 MHz spectrum in a given Tier 5 area. Operator A applies for the rights to spectrum held by operator B to deploy service. Operator B retaliates by asking for rights to the spectrum held by operator A in the same area, so the business case of operator A is now compromised. If operator A was awarded spectrum in a given Tier 5 for deployment, its own underused assets in the same area would thus be protected for the same 24-month period it has to deploy and offer service before risking losing both its existing underused assets and new spectrum award.

71. ITPA submits that ISED should be concerned with achieving its policy objective, rather than with the existing spectrum holdings of applicants. The idea is to protect the interests of the consumer and prevent the new Access Spectrum Licencing process to be used as a tool for spectrum hoarding.

72. As ITPA previously stated, in the first month of availability of a given band to the Access Spectrum Licencing framework, ISED could register all requests for spectrum and favor those that it considers most consistent with its policy objectives. ITPA suggests criteria such as prioritizing new systems over improvement of existing systems, systems meeting the 50/10 Mbps criteria, etc. In the eventuality that no request or only one request is received by ISED in the first month of the new regime, ISED could then grant the spectrum for this area on a FCFS basis.

Q13 ISED is seeking comments for Option 1 and Option 2, specifically should the deployed and/or undeployed spectrum be based on any frequency band (e.g. 2500 MHz) currently held by the applicant or only the band (e.g. PCS band) for which the application is made?

73. As stated in its answer to Question Q12 above, ITPA submits that spectrum holdings of the applicant for the area should not be a concern. It is quite possible for instance that an applicant holds deployed 700 MHz spectrum and undeployed 2500 MHz in an area but seeks underutilised 850 MHz from another entity because it can easily be overlayed with its existing 700 deployment.

74. Again, ITPA urges ISED to focus on measures that will allow achieving its policy objectives and preventing spectrum hoarding rather than focusing on the spectrum holding of the applicant.

6.5.1 Licence term

Q14 ISED is seeking comments on its proposal to issue access spectrum licences with a three-year licence term and the proposed wording of the condition of licence:

The term of this licence is three (3) years.

At the end of this term, the licensee will have a high expectation that a new licence will be issued for an equivalent licence term unless a breach of licence condition has occurred, a fundamental reallocation of spectrum to a new service is required, or an overriding policy need arises.

75. ITPA supports ISED's proposal to issue access spectrum licences with a three-year licence term and the proposed wording of the condition of licence. ITPA further submits that a 24-month deployment condition should be put in place to prevent the new access spectrum system to be used for spectrum hoarding or speculative behaviour.

6.5.2 Licence transferability, divisibility and subordinate licensing

Q15 ISED is seeking comments on its proposal that access spectrum licences not contain transfer, subdivision or subordination privileges.

76. ITPA supports ISED's proposal that access spectrum licences not contain transfer, subdivision or subordination privileges.

6.5.3 Deployment requirements

Q16 ISED is seeking comments on its proposal to align the deployment conditions for access spectrum licences with the relevant conditions of licence currently applied to the licences in the specific band, taking into account any differing characteristics such as Tier sizes, and the timing as to when those deployment requirements should apply. ISED is also seeking comments on the appropriateness of existing deployment requirements for private networks.

ISED will consider alternative proposals for the deployment requirements for access spectrum licences. Such proposals should contain a rationale and discussion of their implications for ISED's policy objectives

77. ITPA supports ISED's proposal to impose deployment conditions on spectrum awarded through its access spectrum process. In its answer to Question Q12, ITPA proposed that the spectrum awarded through the access spectrum be put to use within 24 months of the award to prevent spectrum hoarding or speculative spectrum acquisition through the new process.

78. In the case of private systems, ITPA discussed under its answer to Question Q7 that ISED should consider granting a spectrum licence uniquely for the area sought by the applicant rather than the entire Tier 5. ITPA believes that an 18 or 24-month window should apply to applicants of private systems. Given that private systems typically do not require the service provider to obtain site lease or land use authority approval, ISED might determine that an 18 -month window is sufficient.

79. ITPA does not oppose the idea of aligning the deployment conditions for Access Spectrum licences with the relevant conditions of licence currently applied to the licences in the specific band, taking into account any differentiating characteristics such as Tier sizes, and

the timing as to when those deployment requirements should apply, but notes that not all spectrum licences follow the same type of deployment conditions.

80. ITPA also notes that ISED has been experimenting with new deployment conditions for spectrum awarded through its latest spectrum auctions, notably in the 2019 600 MHz auction and the 2021 3500 MHz auction processes; that ISED proposes to award spectrum access licences over a 3-year term with high expectation of renewal; and, that no spectrum has ever been awarded by ISED at the Tier 5 level.

81. ITPA believes that all those facts taken together will make it difficult for ISED to completely align licence conditions for spectrum assigned under the new access framework with relevant licence conditions of specific bands for existing licences. Instead, deployment conditions where a certain portion of the population is covered for remote Tier 5 and for rural Tier 5 should be sufficient for ISED to monitor and validate that spectrum has been put to use by the licence holder.

82. ITPA submits that propagation characteristics of the band should also be taken into consideration by ISED when defining deployment conditions. Low band spectrum provides better coverage than mid band in similar propagation conditions, therefore the investment required to provide blanket coverage to rural or remote areas is lower with low band spectrum than mid-band. Consequently, ITPA submits that deployment requirements for mid-band spectrum, when expressed in terms of percentage of the population covered, should be less stringent than those of low band spectrum.

6.5.4 Other conditions of licence

Q17 ISED is seeking comments on its proposal to apply the conditions of licence set out in annex B to access spectrum licences issued through the proposed Access Licensing framework.

83. ITPA supports ISED proposal to apply remaining licence conditions, based on existing policies and procedures, to access spectrum licences issued through the proposed Access Licensing framework.

6.6 Initial access spectrum licence bands

Q18 ISED is seeking comments on its proposal to make 800 MHz cellular available for access spectrum licenses in rural and remote Tier 5 service areas in which the existing primary or subordinate has no deployment.

84. ITPA supports ISED's proposal to make 800 MHz cellular available for access spectrum licenses in rural and remote Tier 5 service areas in which the existing primary or subordinate has no deployment. This should be subject to consideration of the coverage of existing systems in the Tier 5 areas where no deployment exists but coverage is provided by systems located outside of the Tier 5 area borders.

85. ITPA submits that it is important that ISED grants spectrum holders sufficient time to deploy their networks and meet their deployment conditions before spectrum is made available to other entities. As such, ITPA submits that new spectrum licences - awarded through ISED's regular process, should not be deemed available through the Access Spectrum Licencing Framework.

86. As the new licencing regime considers unused spectrum in rural and remote areas only, better propagation characteristics are desirable. ITPA therefore believes that favorable propagation characteristics should certainly be taken into account when considering additional bands where the proposed Access Licensing framework will apply. Propagation characteristics of 800 MHz spectrum makes it ideal for rural and remote areas.

87. ITPA submits that other principles expressed in its answer to Question Q5 should also be considered by ISED as it makes 800 MHz spectrum available through the new licensing regime.

Q19 ISED is seeking comments on its proposal to modify the CTFA, where relevant, to change the existing fixed service allocation to primary status in the 824-849 MHz/869-894 MHz range, noting that the fixed service is already allocated on a primary basis in the 890-894 MHz portion.

88. ITPA supports ISED's proposal to modify the CTFA.

Q20 ISED is seeking comments on its proposal to make PCS blocks A to F available for access spectrum licenses in rural and remote Tier 5 service areas in which the existing primary or subordinate licensee has no deployment.

89. ITPA supports ISED's proposal to make PCS blocks A to F available for access spectrum licenses in rural and remote Tier 5 service areas in which the existing primary or subordinate licensee has no deployment, subject to consideration of the coverage of existing systems in the exclusion of Tier 5 areas where no deployment exists but coverage is provided by systems located outside of the Tier 5 area borders

90. ITPA submits that it is important that ISED grants spectrum holders sufficient time to deploy their networks and meet their deployment conditions before spectrum is made available to other entities. As such, ITPA submits that new spectrum licences - awarded through ISED's regular licensing process should not be deemed available through the Access Spectrum Licencing Framework.

91. ITPA submits that other principles expressed in its answer to Question Q5 should also be considered by ISED as it makes PCS spectrum available through the new licensing regime.

Q21 ISED is seeking comments on any other spectrum licence bands that meet the principles proposed in [section 5](#) that could be considered for access spectrum licensing.

92. ITPA submits that the frequency bands, outside of Cellular blocks A & B and PCS blocks A to F would be most suitable for ISED's new Access Spectrum Licencing Framework, considering the criteria established in section 5 of the Consultation document as follows:

    - Availability of a proper equipment ecosystem,

    - The propagation characteristics of those bands - making them suitable to rural/remote deployments,

    - The time elapsed since ISED auctioned these bands, or the time current primary and subordinate licence holders had to deploy the spectrum since those auctions

93. Given winners of spectrum awarded in the AWS-1 band auction in 2008 and the 700 MHz band auction in 2014 undoubtedly have had sufficient time for full deployment, ITPA submits that these 2 bands should be made available on a priority basis by ISED in the new Access Spectrum Licencing Framework.

94. ITPA notes that the initial General Deployment Requirements of the 700 MHz band were set for a 10 year period, which will expire in 2024. Mobile Network Operators who provided HSPA service were also obligated to deploy the spectrum in 97% of their HSPA footprint (based on population) within 7 years.

95. ITPA notes that AWS-1 licences were auctioned in 2008 for a 10-year term, using roll out targets established by ISED for Advanced Wireless Services and other Spectrum in the 2 GHz Range.[7] A Consultation process was initiated by ISED in June 2017 and Deployment Requirements to be met 8 years and 20 years into the new term were established by ISED in February 2018. Those deployment conditions are to be met by 2026 and 2038 respectively.

96. Given the fact that AWS and PCS have similar deployment characteristics and availability of RAN equipment supporting both bands in the 3GPP ecosystem, ITPA believes it is unlikely that service would have deployed PCS but not AWS. ITPA therefore believes that ISED could align deployment requirements in both bands and make AWS-1 spectrum available through its new Access Spectrum Licensing framework.

97. ITPA submits that similar arguments could be made to prioritize the availability of 700 MHz spectrum (MBS) through ISED's new Access Spectrum Licencing Framework, based on the propagation characteristics similarities and availability of RAN equipment supporting both 800 MHz Cellular and 700 MHz MBS spectrum, even if the 700 MHz spectrum was only licensed by ISED in 2014. ISED could easily validate through its Spectrum Management System that AWS-1 and 700 MHz have similar deployment levels to PCS and Cellular bands, despite being more recent in the 3GPP mobile ecosystem.

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[7] https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf08866.html

6.6.3 Technical requirements for initial access spectrum licences

Q22 ISED is seeking comments on the proposal to generally adopt the same technical requirements, including coordination requirements, as published in RSS-132 and SRSP-503 in the cellular band, and RSS-133 and SRSP-510 in the PCS band for future access spectrum licences.

98. ITPA supports ISED's proposal to generally adopt the same technical requirements, including coordination requirements, as published in RSS-132 and SRSP-503 in the cellular band, and RSS-133 and SRSP-510 in the PCS band for future access spectrum licences.

6.6.4 Treatment of existing licences in the 800 MHz cellular and PCS bands

Q23 ISED is seeking comments on the proposal to amend the Condition of Licence concerning "International and Domestic Coordination" for all existing spectrum licensees in blocks A and B of the cellular band and blocks A through F, inclusively, of the PCS band as follow: This licence is subject to licensing by access spectrum licensees in accordance with the Access Licensing framework. Where an access spectrum licence has been issued, the licensee may only deploy in the area licensed to an access spectrum licensee where the licensee and the access spectrum licensee have entered into a coordination agreement.

99. ITPA supports ISED's proposal.

Q24 ISED is seeking comments on its proposal that existing cellular and PCS stations under spectrum licences will be protected from access spectrum licence operations and would not be required to coordinate with new access spectrum licence operations in adjacent service areas.

100.   ITPA supports ISED's proposal and notes that such protection may prevent the implementation of systems in Tier 5 areas where ISED considers there are no deployments, because systems in adjacent Tier 5 areas are protected.

101.   Given the fact that Tier 5 areas are generally small, ITPA submits that ISED should consider coverage from systems in adjacent licence areas before determining that a spectrum block has not been deployed in a given Tier 5 area.

Q25 ISED is seeking comments on its proposal that any future stations deployed by existing cellular and PCS spectrum licensees would be subject to the coordination rules in SRSP-503 and SRSP-510 applied at the new Tier 5 service area boundary where an access spectrum licence has been issued.

102.   ITPA supports ISED's proposal.

Q26 *ISED is seeking comments on its proposal that existing radio licensees operating standard systems in the PCS band would be protected from access spectrum operations and access spectrum licensees may not trigger displacement of existing radio licences in the PCS band.*

103.   ITPA supports ISED's proposal.

6.6.7 Process for making access spectrum licences available

Q27 *ISED is seeking comments on the process for making access spectrum licences available and the options described in section 6.6.7 of the Consultation document.*

104.   ITPA agrees with ISED regarding the following wireless industry / regulatory issues and conditions:

- the potential number of spectrum blocks made available through the new Access Spectrum Licencing Framework is far greater than in any 'first come, first served' licencing process previously implemented by ISED;

- the level of demand for undeployed spectrum blocks is unknown; and,

- potential applicants will likely require assistance with or clarifications of the licensing process.

105.   ITPA is, however, concerned that ISED's attempt to anticipate such demand and establish a process to cope with it might unnecessarily create delays in spectrum awards, especially in situations where the demand is not as high as anticipated.

106.   For example, in its consideration for Option 2, where ISED would maintain its current service standards but would release the underused spectrum in tranches (e.g. 50 blocks at a time), ISED does not appear to consider an accelerated release timeline in the event the demand is not as high as anticipated, and thus, would unnecessarily delay the awarding of spectrum. Additionally, there is a possibility that an interested party might require spectrum from multiple releases to secure financing from its project, delaying deployment or putting at risk the viability of the project.

107.   For those reasons, ITPA submits that all spectrum should be released simultaneously as per ISED's Option 1 and that, should the demand for unused blocks be lower than anticipated, ISED could simply proceed more expeditiously than the contemplated 126 calendar days window.

Q28 *Under both options, ISED is seeking comments on its proposal to begin access spectrum licensing three months after the publication of the decision.*

108.   ITPA has no objection to ISED's proposal.

Q29 *Under both options, ISED is seeking comments on its proposals to limit the number of access spectrum licence applications to:*

- *Option 1: 20 per applicant per 12-month period*

- *Option 2: 5 per applicant at the opening of the access licensing process for each tranche*

109.   As previously stated, ITPA anticipates that Option 2 would be a less effective process than Option 1 in light of the fact that the release of "tranches'' across Canada to ensure equitable geographic distribution will lead to partial or incomplete spectrum releases everywhere. This in turn, could impede applicants from accessing spectrum in a given Tier 5 in a timely fashion or create artificial and temporary spectrum scarcity for a given licence area.

110.   ITPA however supports a limit per applicant, as contemplated by ISED, to ensure all service providers have the opportunity to ask for spectrum. However, in situations of very low demand, or after the Access Spectrum Licencing Framework has been in place for a period of time, ISED should not slow down access to spectrum in rural and remote areas by imposing a limit to the number of licences an applicant can request when it has been demonstrated that other service providers have no interest in the relevant spectrum access licences.

Q30 Under Option 2, ISED is seeking proposals on how it should prioritize Tier 5 licence areas and spectrum blocks if it adopts a sequential release of spectrum for access spectrum licensing. Proposals should address the key considerations of equitable geographic distribution, coverage, impacts on existing licensees, potential business cases, and timeliness.

111.   For the reasons stated above, ITPA considers that ISED should proceed with Option 1 and release spectrum simultaneously everywhere, and work at reducing the 126-calendar day window according to demand for spectrum under the access framework.

7. Process for access radio licences

7.1 Site-specific access radio licences

Q31 ISED is seeking comments on its proposal to issue site-specific access radio licences within rural and remote Tier 5 service areas under the Access Licensing framework.

112.   ITPA supports ISED's proposal to issue site-specific access radio licences within rural and remote Tier 5 service areas under the Access Licensing framework and notes that a site based process could also be applicable to private systems contemplated under the Access Spectrum Licencing Framework discussed in section 6 of the Consultation.

7.2 Process for making access radio licences available

Q32 ISED is seeking comments on its proposal to follow its LMR licensing process to receive and review applications for access radio licences.

113.   ITPA does not oppose ISED's proposal.

***Q33** ISED is seeking comments on its proposal not to limit the number of access radio licence applications an applicant may submit via the Spectrum Management System for these bands.*

114.   ITPA does not oppose ISED's proposal.

7.3 Eligibility

***Q34** ISED is seeking comments on potential eligibility restrictions for access radio licences.*

115.   ITPA does not oppose ISED's proposal.

7.4.2 Radio station installations

***Q35** ISED is seeking comments on its proposal to apply the conditions of licence listed in section 7.4 to access radio licences.*

116.   ITPA does not oppose ISED's proposal.

7.4.3 Initial access radio licence band

***Q36** ISED is seeking comments on its proposal to allow broadband use in the 900 MHz LMR band as shown in figure 6 of the Consultation Document.*

117.   ITPA supports ISED's proposal.

***Q37** ISED is seeking comments on its proposal to issue access radio licenses in the 897.5-900.5 MHz and 936.5-939.5 MHz portions of the 900 MHz LMR band in rural and remote Tier 5 service areas and only in locations within those service areas where there will be no interference to existing LMR operations.*

118.   ITPA supports ISED's proposal.

***Q38** ISED is seeking comments on availability of equipment for the proposed broadband service, including the feasibility of modifying 3GPP band 8 equipment.*

119.   ITPA notes that LTE Band 8 is used in all ITU regions with the exception of North America[8]. The band is one of the oldest and most widely used around the globe and virtually all established user equipment providers have products that support the band.

120.   ITPA is of the opinion that ISED should carefully consider the implications of allowing standard LTE band 8 equipment in Canada, discussed at paragraph 116 of the Consultation document, especially in remote areas, or rural areas far from the US border - where the likelihood of interfering with MCS or wireless microphone operations is weak.

121.   ITPA considers that having access to 3+3 MHz of new broadband spectrum requiring modified LTE band 8 equipment is better than no spectrum, but that a full 5+5 MHz

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[8] https://en.wikipedia.org/wiki/LTE_frequency_bands

compatible with standard band 8 equipment is preferable, as the spectrum has a similar reach to that of the 800 Cellular band (LTE band 5), which would be a band of choice for rural broadband or mobile broadband applications if it were available.

122.   ITPA believes a standard implementation of band 8, with the standard 45 MHz duplex spacing would enable a wider range of services to be offered, as the feasibility of using modified band 8 equipment to provide mobile broadband service is unclear to ITPA.

123.   ISED will ultimately be the judge and determine the best option to implement in Canada, but ITPA suggests that allowing a 5+5 MHz block of band 8 in its standard form in Canada, despite additional complexities, might outweigh the benefits of the adoption of 3+3 MHz of spectrum requiring modified band 8 equipment only available in the US.

Q39 ISED is seeking comments on the potential use cases of 3/3 MHz for broadband services, including the potential for 5G deployment.

124.   ITPA concurs with ISED on the fact that, to date, 5G systems require a minimum of 5 MHz of spectrum in opposition to LTE systems requirements for between 1.4MHz and 3 MHz. However, technology evolution has made the transition between 4G LTE and 5G system more fluid than ever before, even allowing eNodeB and gNodeB to share the spectrum dynamically and instantaneously.

125.   This evolution allows the Radio Access Network (RAN) to dynamically assign the spectrum to LTE or 5G depending on the number of users on the system and the device capabilities of those users. LTE and 5G systems will therefore be able to coexist for years.

126.   ITPA believes that the biggest concern with the assignment of 897.5-900.5 MHz/936.5-939.5 MHz is not related to the fact that it only represents 3+3 MHz of broadband spectrum, but rather than it requires modification to the 3GPP equipment due to different duplex spacing (39 MHz instead of the regular 45 MHz).

127.   Even though ISED mentions at paragraph 112 of the Consultation that only 18 months after the FCC decision to modify its 900 MHz LMR band plan to allow broadband, that equipment supporting the US case of band 8 is already available, ITPA submits that most of the devices available around the world use the standard 45 MHz of duplex spacing and would not be able to make use of the US band.

128.   ITPA notes that ISED will have to normalize the US equipment for use in Canada relatively quickly so the new US ecosystem can benefit Canadians.

129.   Based on the above, ITPA supports alignment with the US for the LMR band plan but believes Canadian would benefit more from a full alignment with standard LTE band 8 equipment. This way, user equipment available around the world could be used in Canada and RAN equipment covering band 5 (the North American Cellular band) could eventually be modified to support band 8. This approach, in ITPA's opinion, would better support broadband deployments in Canada than the proposed 3+3 MHz of LMR broadband spectrum at 39 MHz duplex spacing.

Q40 *ISED is seeking comments on the feasibility of also making 896-901 MHz and 941-946 MHz available for broadband at the same time as 897.5-900.5 MHz and 936.5-939.5 MHz.*

130.   ITPA believes that ISED should explore the possibly of simultaneously allowing flexible use services in 5+5 MHz of spectrum with 45 MHz duplex spacing in the 896-901/941-946 MHz range and 3+3 MHz of spectrum with 39 MHz duplex spacing in the 897.5-900.5/936.5-939.5 MHz range.

131.   The map showing the location of existing licences in 896-901 MHz and 935-940 MHz band provided at paragraph 109 of the Consultation document could be supplemented with NPCS, MCS and wireless microphone licences to determine where the full 5+5 MHz of spectrum could be awarded.

132.   ITPA believes that because licencing is site based, ISED should be able to minimize instances of interference by preventing new broadband radio licences to be awarded at a certain distance from existing licensees, thus protecting incumbent systems from new broadband deployments, including along the US border.

7.4.4 Technical requirements for initial access radio licences

Q41 *ISED is seeking comments on its proposal to use the same methodology for determining geographic separation for broadband service as already included in SRSP-506 for land mobile systems.*

133.   ITPA supports ISED's proposal.

Q42 *ISED is seeking comments on whether the 1.5 MHz and 500 kHz of separation are sufficient to protect the adjacent band Air-Ground Radiotelephone Service, fixed service and Narrowband Personal Communications Service.*

134.   ITPA supports ISED's proposal.

8. Subordinate licensing

8.1 Support for the use of subordinate licences as an integral part of a dynamic secondary market

Q43 *ISED is seeking comments on the potential or actual benefits of subordinate licensing to increase rural broadband access and accommodating new innovative network usage.*

135.   ITPA agrees with ISED that a vibrant secondary market for spectrum in Canada is an important way to increase service provision where existing licensees have not yet deployed their licenced spectrum. It is desirable from the perspective of increasing connectivity to Canadians and helps the fulfilment of ISED's policy objectives to maximize the economic and social benefits that Canadians derive from the use of the radio frequency spectrum

resource, including the efficiency and competitiveness of the Canadian telecommunications industry, and the availability and quality of services to consumers.

136.   ITPA also notes the comment made by ISED at paragraph 127 of the Consultation document to the effect that existing licensees may have little incentive to enter into subordinate agreements with those seeking access to spectrum. ITPA believes that with further incentives, existing licensees may become more favorable to the subordination of their unused spectrum. ITPA believes this consultation process itself will incentivize existing licensees to further consider subordination, as the alternative might be losing control of the resource and seeing it included in ISED's new Access Spectrum Licencing Framework.

137.   ITPA commends ISED for such an innovative approach to fostering access to spectrum for Canadians. There is no doubt that ISED's consideration of the points raised in this document will have a positive impact on the openness of existing licensees towards subordination of underutilised licences.

8.2.2 Simplifying information requirements to facilitate a timely review process

Q44 ISED is seeking comments on ways in which to streamline the general application requirements for subordinate licences as set out in sections 5.6.3 and annex D of CPC-2-1-23. ISED also seeks proposals to streamline the application process for all subordinate licence applicants, including those in commercial mobile bands who must also provide material addressing the criteria and considerations in section 5.6.4 of CPC-2-1-23. In these proposals, ISED also seeks comments as to how parties can demonstrate (e.g., an attestation, or other commitment) that their request for a subordinate licence does not constitute a transfer, deemed transfer, or prospective transfer as discussed in section 8.2.1 of the Consultation document.

138.   ITPA notes that the Sample Application for a Subordinate Licences form provided in Annex D of CPC-2-1-23 is relatively straightforward. ITPA does not oppose ISED making the appropriate changes to the form so the applicant declares or confirms it is not entering into a licence transfer agreement with the primary spectrum holder.

139.   ITPA submits that as long as ISED does not require information in a subordination request that it already has as part of the primary spectrum licence or technical information not already generally required for the issuance of the primary licence, the process should be simple enough.

140.   ITPA further submits that in order to streamline the subordination process, a visual database be made available to applicants. For efficiency and timeliness, this database should be similar to ISED's Service Areas for Competitive Licencing[9] webpage, but where the applicant could select specific blocks of a given spectrum band and see a map of the licence area (in relation to the entire country) and identify which service provider is the primary or subordinate licence holder. Such a database would go a long way in facilitating the spectrum subordination process. ISED' s current Spectrum Licence Browser does not provide

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[9] https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/h_sf01627.html

information on specific frequencies (or blocks) for a given licence and does not necessarily provide visibility of the location of the licence. Each licence also needs to be researched individually by the applicant which makes the process tedious. A more transparent system would greatly facilitate the preparation of subordination requests from interested parties and in particular, enable the participation of smaller service providers.

141.   ITPA believes that a system as flexible as the Service Areas for Competitive Licencing webpage that includes flexible use spectrum licences along with information on who holds them would do more to foster subordination than changes to the application process or application form. ITPA notes that the same visual system could be adapted to show spectrum licences available through ISED's new Access Spectrum Licencing Framework.

8.3 ISED's role in encouraging subordinate licensing

Q45 ISED is seeking comments on facilitating subordinate licensing and encouraging secondary market transactions including:

- *Should additional changes be made to existing licences that will encourage the use of subordinate licences as a means to help deploy more services?*

- *Given ISED's regulatory role, are there any issues or actions ISED should consider?*

142.   In terms of changes to existing licences to facilitate subordinate licensing and encourage secondary market transactions, ITPA is of the view that the new Access Spectrum Licencing Framework proposed by ISED through this consultation will probably be a sufficient incentive for existing licence holders to consider subordination. ISED might consider adding a condition of licence to clarify its right to reissue the spectrum in Tier 5 areas where the primary or subordinate licence holders have had sufficient time to deploy and have not, in order to discourage incumbents from addressing courts as a mean of delaying ISED's efforts.

143.   As expressed in its answer to Question Q44, ITPA is of the view that modifications to ISED's existing database to provide geographical representation of mobile and flexible use spectrum licences through the various licence areas, along with ownership details (up to date contact information of primary and subordinate licence holders), would go a long way to achieve ISED's objective of facilitating subordinate licensing and encouraging secondary market transactions.

8.4 Licensee Interaction - Information Required to Consider Subordination Requests

Q46 ISED seeks comments on what additional information, if any, should be included in the draft form shown in annex D.

144.   ITPA is of the opinion that a geographical representation of mobile and flexible use spectrum licences maintained by ISED is a better option to facilitate subordinate licensing and encourage secondary market transactions than the form proposed by ISED.

9. White space policy updates and RRBS moratorium

9.1.1 Database hosting location

Q47 *ISED is seeking comments on its proposal to remove the current restriction on database hosting in order to facilitate cloud-based database hosting solutions.*

145.   ITPA does not object to ISED's proposal to remove the current restriction on database hosting in order to facilitate cloud-based database hosting solutions. However, ITPA notes that a plethora of cloud-based services exist in Canada, and that removing the restriction will not necessarily enable additional white space database administrators (WSDBA) to enter the Canadian market, as interested parties from other jurisdictions could have already easily used cloud based services hosted in Canada.

9.1.2 TV channels 3 and 4

Q48 *ISED is seeking comments on its proposal to allow the use of TV channels 3 and 4 by all types of WSD*

146.   ITPA does not oppose ISED's proposal.

9.2 Rural remote broadband systems (RRBS)

Q49 *ISED is seeking comments on its proposal to no longer renew existing RRBS licences after March 31, 2027.*

147.   ITPA does not oppose ISED's proposal and notes that favoring White space systems over RRBS system could lead to development in spectrum sharing techniques that, if they materialized, would benefit Canadian consumers and foster the fulfilment of ISED policy objectives.

*** End of Document ***

Independent Telecommunications Providers Association

Jonathan L. Holmes
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26 October 2021

<u>***By Electronic Mail***</u>

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Subject: *Consultation on New Access Licensing Framework, Changes to Subordinate Licensing and White Space to Support Rural and Remote Deployment* – SLPB-004-21

1.   Pursuant to the procedure established by the Consultation document referenced above, the Independent Telecommunications Providers Association (ITPA) submits its comments on the behalf of its member companies. A list of ITPA members can be found in the Appendix.

Yours truly,

Jonathan L. Holmes

Attachment

Appendix

Independent Telecommunications Providers Association (ITPA)
9315-1884 Québec inc.
Brooke Telecom Co-operative Limited
Bruce Telecom
City West Cable & Telephone Corp.
Cochrane Telecom Services
CoopTel
Execulink Telecom Inc.
Gosfield North Communications Co-operative Limited
Hay Communications Co-operative Limited
Huron Telecommunications Co-operative Limited
The Lansdowne Rural Telephone Company Limited
Mornington Communications Co-operative Limited
Nexicom Inc.
North Frontenac Telephone Corporation Limited
North Renfrew Telephone Company Limited
Quadro Communications Co-operative Inc.
Roxborough Telephone Company Limited
Sogetel inc.
Tuckersmith Communications Co-operative Limited
Wightman Telecom Limited
WTC Communications

*** End of Document ***

<u>Joint Internet Society and Mozilla</u>
<u>Response to Innovation, Science and Economic Development's (ISED)</u>
<u>Consultation on New Access Licensing Framework, Changes to Subordinate</u>
<u>Licensing and White Space to Support Rural</u>
<u>and Remote Deployment</u>

Introduction

The importance of access to affordable broadband is a now commonplace insight from the COVID-19 pandemic. However, the pandemic has revealed something even more important for policymakers and communication regulators; it has made it clear that inclusion must be a top priority if the Internet is not to become an amplifier of inequality.

Communication technology is a natural amplifier of human activity. Those with affordable access to communication move forward while those without access are quite literally invisible to the connected. Broadband networks are delivering ever greater utility, from education to commerce to social safety nets with the unfortunate side effect that the social and economic gap between those with affordable access and those without increases by default. The inescapable conclusion from this is that inclusiveness, making sure <u>everyone</u> has affordable access to broadband, must be a policy priority.

In its history, the telecommunications sector has gone through important changes from its origins as state-provided public utility, then privatisation and market liberalisation. These changes have enabled the rapid spread of telecommunications networks around the world, not to mention the growth of the Internet. But the growing value of "being connected" combined with slowing growth in economically depressed and rural areas suggests that a new way of looking at connectivity is needed in order to address growing inequality and the need to focus on policies of inclusion. In this context, we welcome ISED's decision to create more flexible access to spectrum in rural areas.

Earlier decisions to make spectrum available in rural areas such as Remote Rural Broadband Service (RRBS) and, more recently, the TV White Space (TVWS) dynamic spectrum framework are laudable but are limited to the deployment of Point-to-Point and Point-to-Multipoint links. Shared spectrum in frequencies designated for International Mobile Telephony (IMT) LTE/5G services has the potential to be a much more significant intervention for a number of reasons:

- Mobile handsets are designed to communicate on IMT frequencies. With RRBS and TVWS, broadband connections must be translated into WiFi hotspots in order to communicate with mobile smartphones. The availability of IMT spectrum to local access service providers means that it may be possible to serve an entire community with one or two towers as opposed to the many WiFi access points that would be required to achieve something similar in the ISM bands;
- A wide ecosystem of manufacturers of LTE eNodeB mini-basestations has emerged globally producing equipment that operates in many LTE frequency bands, and which can be purchased for a few thousand dollars[1]. Affordability combined with increased ease of deployment means that LTE network technologies are within the financial reach of small operators; and,
- The range of IMT frequencies that have the potential for use under this scheme suggest a wide range of possible use cases from IoT to high-speed broadband.

Implementation of this shared spectrum strategy has the potential to address the fact that the high prices paid via spectrum auctions[2] in order to access IMT/LTE spectrum has effectively excluded small operators from using these technologies in spite of their increasing affordability and the significant growth of the manufacturing ecosystem.

Recognising an Ecosystem of Operator Types
We are encouraged by the stated objective of supporting "innovation and the provision of rural services." However, the consultation appears to be focused on commercial operators. This is not surprising as, around the world, most shared IMT spectrum strategies, such as that of the UK regulator[3] and the German regulator,[4] have focused on Private LTE network operators as the likely users of their spectrum. This is often taken to mean corporations with large industrial premises who may benefit from the operation of their own high-speed broadband network.

However, the rural focus of this consultation suggests that there should be more emphasis on the type of operators that are going to provide sustainable, affordable broadband in difficult to reach communities. In particular, we encourage ISED to recognise and make provisions for non-profit operators ranging from community networks to cooperatives to municipal networks. We believe that competition may not be feasible in many hard-to-reach areas. Locally owned non-profit operators may be better suited to creating affordable, sustainable access in these areas. We encourage ISED to recognise non-profit operators in the context of this consultation.

The 2018 Report on Broadband Connectivity in Rural Canada[5] by the Standing Committee on Industry, Science and Technology specifically proposes that:

> "The Government of Canada consider the spectrum allocation process for the purpose of broadband deployment. More specifically, it should focus on the scope of licences, pricing, and

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1 See appendix A for an indicative list of low-cost LTE basestation and RRH manufacturers.
2 Wireless prices have nowhere to go but up after carriers spent big on 5G spectrum auction, 16 Aug 2021, Globe and Mail.
3 OFCOM: Statement: Enabling wireless innovation through local licensing 25 July 2019
4 ITU / World Bank Digital Regulation Spectrum licensing: local and private networks in Germany 6 Oct 2020
5 Broadband Connectivity In Rural Canada: Report of the Standing Committee on Industry, Science & Technology 2018

effective use of allocated spectrum, including ensuring that small providers, non-profit providers, and non- incumbent providers have reasonable access to spectrum for broadband deployment."

Indigenous Communities and Radio Spectrum

Building on the need to recognise an ecosystem of operators and operator types, this consultation represents a particular opportunity to address the broadband access needs of First Nations, Inuit and Métis communities.

In 2016, the Canadian telecommunications regulator, Canadian Radio-television and Telecommunications Commission (CRTC), established a speed target of 50 Mbps download and 10 Mbps upload for all Canadians, including residents of remote regions.[6] Yet as of 2018 (the most recent year for which data is available), only 71.2 percent of households in the Yukon and 61.8 percent in the NWT had access to fixed Internet speeds of 50/10. The situation is worse in Nunavut, where less than half of households have access to at least 5 Mbps, and no households have access to speeds up to 16 Mbps or faster. For First Nations on-reserve, only 31.3 per cent of households have access to the 50/10 target speeds.[7] This contrasts against 87.4 percent of all households in Canada having Internet access that meets these standards[8].

Other countries, notably Mexico, New Zealand, and the United States, have established spectrum management mechanisms to serve Indigenous communities:

- In Mexico, in 2015, the regulator IFETEL set aside 2x5MHz of spectrum in the 800MHz band[9] (in the range of 824-849 and 869-894 MHz) for communities being served must be less than 2,500 people or be designated as an Indigenous region or designated as a priority zone. This regulation has led to the deployment of more than a dozen GSM base stations in underserved, Indigenous regions by community-owned operators[10]. As of 2021, the government has ruled that these operators should be exempt from spectrum fees[11].

- In the United States, in 2020, as part of the Federal Communications Commission (FCC) decision to auction the 2500MHz band, a decision was taken to allow Indigenous communities the opportunity to acquire the spectrum over their lands at no charge. Known as the Rural Tribal Priority Window, the regulatory dispensation has resulted in 270 licenses being issued[12] to qualifying Tribes as of mid-2021.

- In New Zealand, the campaign for spectrum rights by the Māori began as far back as 1990 when they questioned the right of the government to license radio spectrum without consulting Indigenous communities. More recently, in late 2019, 50MHz of 3.5GHz spectrum was

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6 See https://crtc.gc.ca/eng/archive/2016/2016-496.htm

7 CRTC. (2019). Communications Monitoring Report 2019.

8 CRTC LTE and Broadband Availability 2019

9 IFETEL ACUERDO mediante el cual el Pleno del Instituto Federal de Telecomunicaciones modifica el Programa Anual de Uso y Aprovechamiento de bandas de frecuencias 2015.

10 WIRED Where Cellular Networks Don't Exist, People Are Building Their Own 2015

11 APC Landmark ruling in Mexico allows communities to provide service in areas that the telecoms market does not reach. Feb 2021

12 https://www.fcc.gov/rural-tribal-window-updates

assigned[13] to the Maori until October 2022 when more permanent arrangements are expected to be concluded.

We believe that the proposal to introduce a new Access Licensing Framework for unused spectrum is a positive and important step in enabling communities to connect themselves. However, given the disproportionate lack of affordable Internet access in Indigenous communities, we are concerned by the lack of consideration as to how this process should be structured with respect to Indigenous rights. We believe there is an opportunity to learn from examples of spectrum regulations in support of Indigenous Peoples around the world and create forward-looking spectrum regulations that directly empower Indigenous communities.

Summary of Recommendations:

1. We fully support the introduction of the Access Licensing Framework but encourage ISED to adopt a framing that is more oriented towards digital inclusion and the recognition and enablement of an ecosystem of operator types that can provide affordable access in challenging regions. In particular we would like to see acknowledgement of community networks, cooperatives, and even municipal network operators.

2. We encourage ISED to consider other bands such as Band 40 and 41 for inclusion in the framework.

3. We encourage ISED to adopt a flat fee mechanism for Access Licensing, similar to that implemented by OFCOM in order to simplify cost planning and administration.

4. We encourage ISED to make at least 2x5MHz of spectrum available in Band 8 in order to enable its use for broadband services.

5. We encourage ISED to develop a "toolkit" to support the license application process and lower the barrier for rural communities who wish to take advantage of this new framework.

6. ISED should adopt specific provisions within the Access Licensing framework to enable Indigenous communities to address their own connectivity challenges. This should include:
   a. Fee waivers for Indigenous operators;
   b. First right of refusal for Indigenous communities in rural Tier 5 regions on spectrum license applications affecting their territories; and,
   c. Reimbursement of the cost of developing the application in order to ensure all potential applicants have access to the resources necessary to successfully access their spectrum over their lands.

7. Beyond this consultation, we strongly encourage ISED to engage and consult with Indigenous communities, to understand their needs with respect to how the spectrum over their lands is allocated.

8. Consideration should be given to the rights of Indigenous governments and Indigenous-owned entities to the spectrum over their lands.

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13 New Zealand: Cabinet paper: Early Access to 5G Radio Spectrum 2019

9. We encourage ISED to consider the implementation of regulations regarding synchronised, semi-synchronised and unsynchronised operation by shared spectrum license holders in terms of geographical areas and type of cells. Synchronised operation mitigates interference between basestations therefore allowing coexistence between adjacent networks without the need for guard bands or additional filters. This operating mode simplifies network deployment because no additional interference mitigation is required."

However, recognising that synchronisation may present challenges in terms of time between differing types of technology, notably 5G-NR and LTE-TDD, we recommend that ISED:

   a. set shared bands to a single TDD pattern compatible with both LTE and 5G NR; and,
   b. consider the necessary geographic separation and/or guard band required to ensure the compatible operation of differing TDD patterns between urban 5G operators and rural 4G/5G operators

Responses to specific questions

Access Licensing Framework

Q1 ISED is seeking comments on its proposal to implement a new Access Licensing framework to make licences available in rural and remote areas where there is unused spectrum.

We fully support the concept of the Access Licensing framework to make spectrum licenses available in rural areas. We encourage ISED to be transparent in the methodology for co-existence calculations.

Q2 ISED is seeking comments on its proposal to issue access spectrum licences and access radio licences on a first-come, first-served basis.

We agree that a first-come, first-served license assignment process may be best suited to this framework. However, Indigenous governments and Indigenous-owned entities should have first right of refusal for any access spectrum licences and access radio licences issued over their lands.

Q3 ISED is seeking comments on its proposal to use the rural and remote Tier 5 service areas as the basis to determine the rural and remote areas in which it will apply access licensing.

We support the use of Tier 5 service areas with the provision that ISED should reserve the right to consider and implement smaller Tier areas should Tier 5 regions prove problematic. More detail on how the Tier 5 services were calculated would be appreciated.

Q4 ISED is seeking comments on its proposed principles to be used when considering spectrum licensed or radio licensed bands where the proposed Access Licensing framework will apply.

We generally agree with the proposed criteria.

Q5 ISED is seeking comments on other principles it should take into account when considering bands where the proposed Access Licensing framework will apply.

N/C

Q6 ISED is seeking comments on adopting a flexible use licensing model for fixed and mobile services when issuing access spectrum licences.

We support flexible use licensing.

Q7 ISED is seeking comments on its proposal to use Tier 5 service areas for the proposed access spectrum licences and any associated potential technical challenges should this process be applied to all commercial mobile or flexible use frequency bands.

N/C

Q8 ISED is seeking comments on any future adjustments to the licence areas for access spectrum licences, including consideration of more localized areas (e.g. smaller than Tier 5).

The Tier 5 service areas should be reviewed at the expiry of the first round of licenses (i.e. after three years) and consideration of additional granularity in service area size be done then.

Q9 ISED is seeking comments on its proposed process for identifying rural and remote Tier 5 service areas in which there is unused spectrum that would be made available for access spectrum licensing.

We would like more information on how multiple applications for spectrum in a single Tier 5 service area will be handled. Does spectrum assigned through this process grant exclusivity in the Tier 5 service area for the frequencies assigned? What is the likely size of the assignments? Is the assignment size fixed? How many licenses might theoretically be granted across the 850MHz and PCS band in a single Tier 5 service area?

Q10 ISED is seeking comments on its proposal to impose a condition of licence to prohibit existing primary and subordinate licensees' deployment in areas for which an access spectrum licence has been issued.

We support this condition.

Q11 ISED is seeking comments on its proposal that stations already deployed by primary or subordinate spectrum licensees within their service areas would be protected from subsequent deployment under access spectrum licences.

We agree that the existing deployments of primary and subordinate spectrum licensees should be protected.

"Under Option 1, in order to be eligible for an access spectrum licence, at the time of application, an applicant must not hold a spectrum licence for undeployed commercial mobile, fixed, or flexible use spectrum, in the same Tier 5 licence area as the area for which it is seeking an access spectrum licence.

Under Option 2, in order to be eligible for an access spectrum licence, at the time of application, an applicant must not hold a spectrum licence, whether deployed or undeployed, for commercial mobile, fixed, or flexible use spectrum, in the same Tier 5 licence area as the area for which it is seeking an access spectrum licence."

Q12 ISED is seeking comments on the above options for eligibility.

> We support Option 2 that an applicant must not hold a spectrum license whether deployed or undeployed in the Tier5 service area in order to maximise the opportunity for new operators to gain access to spectrum.

Q13 ISED is seeking comments for Option 1 and Option 2, specifically should the deployed and/or undeployed spectrum be based on any frequency band (e.g. 2500 MHz) currently held by the applicant or only the band (e.g. PCS band) for which the application is made?

> We believe the Access Licensing framework should only be available to those operators who do not already hold an IMT spectrum license in the Tier5 service area.

Q14 ISED is seeking comments on its proposal to issue access spectrum licences with a three-year licence term and the proposed wording of the condition of licence above.

> We support both the license term and the wording of the condition.

Q15 ISED is seeking comments on its proposal that access spectrum licences not contain transfer, subdivision or subordination privileges.

> We agree that access spectrum licenses should not contain transfer, subdivision, or subordination privileges as that would add a level of complexity to this new granular license scheme which would be undesirable.

Q16 ISED is seeking comments on its proposal to align the deployment conditions for access spectrum licences with the relevant conditions of licence currently applied to the licences in the specific band, taking into account any differing characteristics such as Tier sizes, and the timing as to when those deployment requirements should apply. ISED is also seeking comments on the appropriateness of existing deployment requirements for private networks.

> We believe that it is inappropriate to apply existing license conditions to access spectrum licensees. What is appropriate for large scale national or sub-national license holders, is unlikely to always be a good match for small operators addressing the most challenging access environments. Almost by definition, the Tier5 rural service areas are the least attractive regions for mobile network operators. As such, applying the same deployment requirements seems inappropriate. We suggest that at the end of Year 1, the license must have made 'reasonable' efforts to deploy network equipment in the licensed frequencies. At the end of the three year license period, validation should come from users and communities served by the licensee.

Q17 ISED is seeking comments on its proposal to apply the conditions of licence set out in annex B to access spectrum licences issued through the proposed Access Licensing framework.

> Regarding Annex B, we have the following comments:
> - B2. Fees. Given that the objective of these licenses is to maximise their uptake, and that service areas are small, and that the license period is short, we suggest that a simplified approach to fees be adopted such as that taken by OFCOM who have adopted a simple one-off license fee for their Local Access license[14]. A simple flat fee structure will make for one less calculation in business sustainability planning.
> - **B2. Fees. We believe that Indigenous communities applying for spectrum should be exempt from spectrum fees.**
> - B9. Lawful interception. While we support lawful interception, we wonder whether this clause is more relevant to operator rather than spectrum licensing?
> - B10. Research and Development. This clause does not seem relevant to this license as the very licenses themselves are a kind of R&D.
> - B11. Mandatory antenna tower and site sharing. Given that likely licensees are either corporates deploying their own private LTE networks or small operators providing access in challenging areas, an infrastructure sharing requirement seems inappropriate.

Q18 ISED is seeking comments on its proposal to make 800 MHz cellular available for access spectrum licenses in rural and remote Tier 5 service areas in which the existing primary or subordinate has no deployment.

> We support this.

Q19 ISED is seeking comments on its proposal to modify the CTFA, where relevant, to change the existing fixed service allocation to primary status in the 824-849 MHz/869-894 MHz range, noting that the fixed service is already allocated on a primary basis in the 890-894 MHz portion.

> N/C

Q20 ISED is seeking comments on its proposal to make PCS blocks A to F available for access spectrum licenses in rural and remote Tier 5 service areas in which the existing primary or subordinate licensee has no deployment.

> N/C

Q21 ISED is seeking comments on any other spectrum licence bands that meet the principles proposed in section 5 that could be considered for access spectrum licensing.

> We propose that Band 41 (2500MHz) and Band 40 (2300MHz) be considered under the access license framework. These frequencies offer a reasonable balance of range and broadband capacity. Both bands have support from popular WISP equipment manufacturers like Cambium and Mikrotik. See Appendix A for more equipment manufacturers.

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14 https://www.ofcom.org.uk/__data/assets/pdf_file/0037/157888/local-access-licence-guidance.pdf

Q22 ISED is seeking comments on the proposal to generally adopt the same technical requirements, including coordination requirements, as published in RSS-132 and SRSP-503 in the cellular band, and RSS-133 and SRSP-510 in the PCS band for future access spectrum licences.

N/C

Q23 ISED is seeking comments on the above proposal to amend the Condition of Licence concerning "International and Domestic Coordination" for all existing spectrum licensees in blocks A and B of the cellular band and blocks A through F, inclusively, of the PCS band.

More generic wording such as that employed by OFCOM in the issuance of the 800MHz spectrum license might offer ISED more flexibility for any future shared spectrum strategies. e.g. *"For the avoidance of doubt the Licences will not guarantee exclusive use of the spectrum awarded. In the future we may grant additional authorisations to allow the use of all, or part, of the spectrum, including the spectrum that is the subject of this Award Process. We would develop and consult on the conditions of use under any such additional authorisations in order to manage the risk of harmful interference.[15]"*

Q24 ISED is seeking comments on its proposal that existing cellular and PCS stations under spectrum licences will be protected from access spectrum licence operations and would not be required to coordinate with new access spectrum licence operations in adjacent service areas.

We support this.

Q25 ISED is seeking comments on its proposal that any future stations deployed by existing cellular and PCS spectrum licensees would be subject to the coordination rules in SRSP-503 and SRSP-510 applied at the new Tier 5 service area boundary where an access spectrum licence has been issued.

We support this.

Q26 ISED is seeking comments on its proposal that existing radio licensees operating standard systems in the PCS band would be protected from access spectrum operations and access spectrum licensees may not trigger displacement of existing radio licences in the PCS band.

We support this.

Q27 ISED is seeking comments on the process for making access spectrum licences available and the options described above.

N/C

Q28 Under both options, ISED is seeking comments on its proposal to begin access spectrum licensing three months after the publication of the decision.

N/C

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15 OFCOM: The award of 800 MHz and 2.6 GHz spectrum Information Memorandum. 2012. Section 4.2, page 43

Q29 Under both options, ISED is seeking comments on its proposals to limit the number of access spectrum licence applications to

"Option 1: 20 per applicant per 12 month period

Option 2: 5 per applicant at the opening of the access licensing process for each tranche"

N/C

Q30 Under Option 2, ISED is seeking proposals on how it should prioritize Tier 5 licence areas and spectrum blocks if it adopts a sequential release of spectrum for access spectrum licensing. Proposals should address the key considerations of equitable geographic distribution, coverage, impacts on existing licensees, potential business cases, and timeliness.

N/C

Radio Access Licenses

Q31 ISED is seeking comments on its proposal to issue site-specific access radio licences within rural and remote Tier 5 service areas under the Access Licensing framework.

N/C

Q32 ISED is seeking comments on its proposal to follow its LMR licensing process to receive and review applications for access radio licences.

N/C

Q33 ISED is seeking comments on its proposal not to limit the number of access radio licence applications an applicant may submit via the Spectrum Management System for these bands.

N/C

Q34 ISED is seeking comments on potential eligibility restrictions for access radio licences.

We would like clarity as to whether a community-owned and -operated broadband network would constitute a private network.

Q35 ISED is seeking comments on its proposal to apply the above conditions of licence to access radio licences.

Regarding the License Term, we understand the rationale for having a one-year license as opposed to three-year license but note that there is no mention of an "expectation of renewal". Some consideration of expectation of renewal is necessary for operators to justify network investments.

Q36 ISED is seeking comments on its proposal to allow broadband use in the 900 MHz LMR band as shown in figure 6.

We support the proposed use of 900MHz for broadband. However, the overwhelming majority of LTE eNodeB manufacturers provide LTE equipment which requires a minimum of 2x5MHz of spectrum. Indeed, 2x5MHz is a reasonable minimum for broadband service delivery. We encourage ISED to make 2x5MHz of spectrum available to licensees in this band.

Q37 ISED is seeking comments on its proposal to issue access radio licenses in the 897.5-900.5 MHz and 936.5-939.5 MHz portions of the 900 MHz LMR band in rural and remote Tier 5 service areas and only in locations within those service areas where there will be no interference to existing LMR operations.

We support this with the above caveat regarding the limitations of 2x3MHz.

Q38 ISED is seeking comments on availability of equipment for the proposed broadband service, including the feasibility of modifying 3GPP band 8 equipment.

Band 8 is one of the most popular frequencies in the 3GPP universe. Given that modern radio equipment is increasingly defined by software as opposed to hardware, we believe that manufacturers will make modified Band 8 equipment available.

Q39 ISED is seeking comments on the potential use cases of 3/3 MHz for broadband services, including the potential for 5G deployment.

See above comments on the limitations of 2x3MHz. We strongly support 2x5MHz.

Q40 ISED is seeking comments on the feasibility of also making 896-901 MHz and 941-946 MHz available for broadband at the same time as 987.5-900.5 MHz and 936.5-939.5 MHz.

We support this.

Q41 ISED is seeking comments on its proposal to use the same methodology for determining geographic separation for broadband service as already included in SRSP-506 for land mobile systems.

N/C

Q42 ISED is seeking comments on whether the 1.5 MHz and 500 kHz of separation are sufficient to protect the adjacent band Air-Ground Radiotelephone Service, fixed service and Narrowband Personal Communications Service.

N/C

Q43 ISED is seeking comments on the potential or actual benefits of subordinate licensing to increase rural broadband access and accommodating new innovative network usage.

N/C

Q44 ISED is seeking comments on ways in which to streamline the general application requirements for subordinate licences as set out in sections 5.6.3 and annex D of CPC-2-1-23. ISED also seeks proposals to streamline the application process for all subordinate licence applicants, including those in commercial mobile bands who must also provide material addressing the criteria and considerations in section 5.6.4 of CPC-2-1-23. In these proposals, ISED also seeks comments as to how parties can demonstrate (e.g., an attestation, or other commitment) that their request for a subordinate licence does not constitute a transfer, deemed transfer, or prospective transfer as discussed in section 8.2.1 above.

N/C

Q45 ISED is seeking comments on facilitating subordinate licensing and encouraging secondary market transactions including:

- "Should additional changes be made to existing licences that will encourage the use of subordinate licences as a means to help deploy more services?
- Given ISED's regulatory role, are there any issues or actions ISED should consider?"

N/C

Q46 ISED seeks comments on what additional information, if any, should be included in the draft form shown in annex D.

N/C

TVWS & RRBS

Q47 ISED is seeking comments on its proposal to remove the current restriction on database hosting in order to facilitate cloud-based database hosting solutions.

We support this.

Q48 ISED is seeking comments on its proposal to allow the use of TV channels 3 and 4 by all types of WSD.

We support this.

Q49 ISED is seeking comments on its proposal to no longer renew existing RRBS licences after March 31, 2027.

We support this.

Appendix A - List of manufacturers of low-cost eNodeB LTE equipment

Manufacturer	Type	Model	Power	1	2	3	4	5	7	8	12	13	14	17	20	26	28	31	38	39	40	41	42	43	46	48	68
Airspan	eNodeB	AirHarmony 1000	2x5w														1				1	1	1				
Baicells	eNodeB	Nova 233	1w	1		1		1	1			1		1			1										
Baicells	eNodeB	Nova 246	20W	1		1			1			1					1										
Blinq	eNodeB	FW-300i																					1	1		1	
Blinq	eNodeB	FW-600																					1	1		1	
Cablefree	eNodeB	4G & 5G LTE Basestation																									
Cambium	BBU	cnRanger Sierra 800 LTE	8TX/8RX																1		1	1	1	1		1	
Cambium	RRH	cnRanger Palisade	4W combined																1		1	1					
CellXica	eNodeB	MuLTEfleX																									
CIG		TDD LTE Picocell SC-200																					1	1			
Eion wireless	eNodeB	2000	30 dBm																				1	1	1	1	
General Dynamics	eNodeB	Fortress(RN2404)	4W																								
Huawei	eNodeB	AtomCell																									
ip.access	eNodeB	R60	2 x 5W	1	1	1	1	1	1	1	1	1	1	1	1		1										
Mavenir	eNodeB	Remote Radio Head	4T4R 4X40W			1																					
Mikrotik	eNodeB	Intercell 10	2*(2*10W)																1	1							
Mikrotik	eNodeB	wAP 4G kit				1				1					1			1				1	1				
Motorola	eNodeB	LXN 7900 Fixed LTE 900	up to 80W / port							1																	
Nokia	eNodeB	flexizone micro,mini-macro	5w – 20w			1			1	1					1	1					1						
NuRAN	eNodeB	xG																									
Octasic	eNodeB	OCTBTS 8500	4 watt	1	1	1	1	1	1	1	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1
Parallel Wireless	eNodeB	CAP2-01	1w							1							1										
Redline	enodeB	RDL-6000 L1 Ellipse 4G	+25dBm			1			1	1	1	1	1	1			1					1	1	1			1
Star Solutions	eNodeB	iCell Compac LTE Macro	2x20w			1							1		1		1										
Tecore	eNodeB	CoreCell-E or M	1w;10w;20w																								
Telrad	eNodeB	BreezeCOMPACT1000	1W per port																				1	1		1	
Vanu	eNodeB	Anywave	5w		1	1				1																	
VNL	eNodeB	VBS-W2 or W10	1Wx2; 5Wx2														1										

Innovation, Science and Economic Development Canada
Senior Director, Regulatory Policy, Spectrum Licensing Policy Branch
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Re: Consultation on New Access Licensing Framework, Changes to Subordinate Licensing and White Space to Support Rural and Remote Deployment B (SLPB-004-21); Canada Gazette. Part I, August 4, 2021 (Vol. 155, no. 33).

1. James Bay Cree Communications Society (JBCCS) welcomes the opportunity to participate in this consultation. As a Cree language radio broadcaster servicing nine Cree communities in the Eeyou Istchee James Bay region of northern Québec, JBCCS has decades of experience providing radio broadcasting services in rural and remote regions. We believe we bring a unique voice to this proceeding, but that our concerns and issues are similar to those of many Indigenous communications service providers across Canada. Access to spectrum is a key element of both closing the persistent digital divide in Canada, and for First Nations, Inuit, and Métis people to exercise their sovereign right to communications.

Who we are

2. JBCCS is a Cree owned and operated non-profit radio broadcasting network that serves Mistissini, Ouje Bougoumou, Nemaska, Waswanipi, Waskaganish, Eastmain, Wemindji, Chisasibi, Whapmagoostui and the Hydro camps of Nemaska, Rupert and EM1 of Québec's North Cree population of approximately 18,000 people through nine local community stations. The JBCCS Board of Directors is made up of representatives from each of the nine community stations, along with a representative from *The Nation* magazine[1] and a representative from the Cree Nation Youth Council.[2]

3. JBCCS's principles are reflected in our community service, language and cultural preservation. The sustainability of the Cree language is dependent on the ability to promote the language through media, and JBCCS has a vital role in ensuring the production and delivery of Cree language content, including: radio, on-line streaming, video production, and social media.

Bringing Cree radio into the digital world

4. The maintenance of the Cree language is a primary motivation for the radio network. The Cree language is currently shifting from a relatively stable language to a more threatened one.[3] In response the Cree Nation Government did a study and release in 2018 the report, "Michiminihtauu Chitayimuwininuu: Eeyou Itchee language engagement sessions". Radio

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[1] http://nationnews.ca/

[2] https://creenationyouthcouncil.ca/

[3] Cree National Government. Department of Social and Cultural development. Eeyou Istchee Language Engagement Sessions Report: *Michiminihtawuu Ghitayimuwininuu.* Unpublished. 2018.

was identified as a vital component in the maintenance and strengthening the community's language skills, as well as for developing contemporary vocabulary and use. In response JBCCS has made the maintenance of the Cree language in everyday life and media content in Eeyou Istchee its primary commitment.

5. JBCCS is engaged with a number of projects that are oriented toward sustaining and improving Cree language skills and fluency, including broadcasting radio programs entirely in Cree; coordinating the establishment and maintenance of repositories for Cree language video and audio recordings; and repatriating Cree language audio and video materials held by non-Cree institutions. We are also working to expand video production and streaming capacity throughout Eeyou Istchee, with the goal of working towards Cree television.

6. Radio is still the primary activity of JBCCS and Cree media, but there is an increasing expectation that all Cree media content be indexed, searchable, and available on a range of platforms. JBCCS is in the process of developing the needed infrastructure, digital platforms and tools to provide Cree language and cultural media services in an increasingly digital world. Outdated and customized studio and transmission equipment in community broadcast stations is being replaced, and broadcast stations and systems are being modernized.

7. This project requires the interconnection of broadcast stations and systems that allow for common tools to used to distribute and manage content. It also requires that all stations adopt a common *audio-over-IP* (AOIP). JBCCS is working with Eeyou Communications Network (ECN) to connect its stations and towers to ECN's fibre optic network.

8. Because the development of telecommunications/media infrastructure, from a Cree perspective, is still in early stages of development, we believe that it is important that ISED be considerate of that fact. Broad changes in spectrum can have an impact on what can be built in the territory and trends of the broader country or province may not be indicative of the realities of Eeyou Istchee.

2-way VHF radio and maintenance of traditional Cree life ways

9. Over the past few years, two-way VHF radio has undergone significant improvement. With the integration of digital technology, handsets have become more powerful and have more features; the spectrum can now be expanded to allow IP integration that could integrate with cellphones, cameras, and GPS systems.

10. Two-way radio can be used for text, messaging, for tacking and monitoring, for connecting to data systems, Wi-Fi, and external telephone systems. These affordances are important for a range of services including emergency services such as community fire services, police operations, first responders, maintenance and road crews, and travellers along the remote highways of Eeyou Istchee.

11. Two-way radio is also the primary media for diverse applications: the Cree Board of Health and Social services for its emergency response unit; first responders for triage; fire and most police departments for calls for intervention; the Cree School Board for internal services;

road and maintenance crews for remote management; trappers for re-supply, emergencies, as an early warning system and for social media.

12. Two-way radio serves as a lifeline for those in the bush, on the roads and highways throughout the year. It is used to communicate with families, for safety and security, and as a basic utility. It is a common site in homes, businesses, and services across the territory.

13. The Cree Trappers Association has spearheaded a project that seeks to harmonize, standardize, and increase the coverage of two-radio communications in Cree hunting and trapping territories. Currently, most trappers use radios with NXDN technology, but new wider-band technologies such as DMR are now feasible, and now users are no longer restricted to old-fashioned limits. DMR (which also use the same VHF antennas in place) allows for the integration of Internet modems and routers and allow full-time GPS monitoring (and memory) and locations tracking.

14. These technologies could allow for safety services to be integrated into the trappers' network so that urgent calls for assistance can access first responder, and land users can act as frontline reporters for developing hazards.

15. The experimental project will use a configuration that includes both direct local management and remote control with an integrated IP technology. This project will demand that a number of community, Hydro-Quebec, ECN towers, as well as those planned towers by Eeyou Mobility be mobilized in developing a standardized, regional 2-way radio network in Eeyou Istchee.

16. We require more time to assess how a changes to LMR licensing processes could directly or indirectly impact JBCCS's different services and projects.

17. *They are proposing to change use of* **896-901 MHz/935-940 MHz** "*The 900 MHz LMR band consists of 399 paired channels of 12.5 kHz channel bandwidth that are mainly used to provide two-way voice communications and support day-to-day operational needs in industries such as oil and gas, utilities, transportation, and manufacturing as well as organizations, such as municipal government. …. In these bands there are approximately 400 licences across the country, mostly concentrated around a dozen locations in Ontario and Alberta, resulting in availability of these channels in most rural and remote areas. Figure 4 shows the approximate locations of licences in the 896-901 MHz and 935-940 MHz bands.*"

Canada and Indigenous Communities, UNDRIP, and Spectrum Sovereignty

18. Article 3 of UNDRIP reads: "Indigenous peoples have the right to self-determination. By virtue of that right they freely determine their political status and freely pursue their economic, social and cultural development."

19. ISED has acknowledged in a range of documents the connection between economic development and universal access,[4] and that all Canadians have a right and should have equal opportunity to participate in the digital world.[5] We argue that to both meet the principles of Indigenous self-determination and social, cultural and economic development outlined in UNDRIP, as well as ISED's universal access objective, Indigenous communities in Canada should have sovereignty over the spectrum in their communities, territories, and regions. That is, Indigenous entities such as the Cree Nation Government should be allocated spectrum that is suited for the provision of reliable and affordable wireless service in their regions.

20. Other countries, notably Mexico, New Zealand, and the United States have established spectrum management mechanisms and programs to serve Indigenous communities. These programs are a step toward the acknowledgement of the rights Indigenous peoples hold over the airwaves of their territories and communities, and demonstrate the benefits of an approach that gives Indigenous communities and service providers access to spectrum.

21. In 2015, the Mexican regulator IFETEL set aside 2x5MHz of spectrum in the 800MHz band for communities served with populations less than 2,500 people, or a designated Indigenous region, or designated a priority zone. This regulation has allowed for the successful deployment of more than a dozen GSM base stations in underserved, Indigenous regions by community-owned operators. With a 2021 Supreme Court ruling, these operators are also exempt from spectrum fees in Mexico.

22. In the United States, the FCC offered a Rural Tribal Priority Window to eligible Indigenous entities to acquire 2.5 GHz spectrum covering their Tribal lands. All federally recognized Tribes and Alaska Native Villages, as well as other entities control and majority owned by such Tribes or consortiums were eligible to apply and designate their own desired licence areas. The program has resulted in about 400 licenses being issued to qualifying tribes to date.

23. The Māori of New Zealand have been advocating for spectrum rights since the 1990s when they challenged the right of the government to license radio spectrum without consulting Indigenous communities. The Māori claims to radio spectrum rests on principles of the Treaty of Waitangi in which authority or "chieftainship" of *taonga*, that is "treasures" were granted to the Māori. Under the principles of the Treaty, the expectation is that all resources are managed in partnership between the Crown and Māori. In 2019, 50MHz of 3.5GHz spectrum was assigned to the Maori until October 2022 when a more permanent assignment is expected to take place.

24. The development of the New Access Licensing Framework offers ISED an opportunity to introduce a comparative program in Canada. It is an opportunity to acknowledge the rights of Indigenous people over spectrum in their territories, and allow for them to directly access unassigned spectrum over their lands, whether covered by Treaties or not.

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[4]citations

[5] citations

The role of radio spectrum in applying the principles of the Truth and Reconciliation Commission Report

25. Creating an Indigenous priority access window for spectrum would uphold federal government commitments including a number of principles in the "Truth and Reconciliation Commission of Canada: Calls to Action" report.

26. Education goals in the Truth and Reconciliation report call for the co-development of a strategy that addresses education attainment levels and success rates among Indigenous students (para: 7), and among other recommendations, the report suggests that the strategy enables "parents to fully participate in the education of their children" (10: vi).

27. Both of these recommendations seem particularly resonant in a time of a global pandemic when students are doing their school work from home. It is more urgent than ever for school boards and educational institutions to develop digital platforms and tools that will allow students to engage with their teachers and classmates during crises such as public health lockdowns, as well as offer access to online courses and other online resources that can help with academic success and the development of a range of skills for students living in rural and remote regions of Canada.

28. While access to a fibre optic backbone is preferable for long-distance education, and ECN has connected two school boards and about 30 Cree and non-Indigenous schools in the region, some communities with schools, as well as cultural camps and villages, hunting camps and traplines will always depend on wireless communications. These more remote locations are a key aspect of education in Cree culture, and having access to digital communications would allow for more young people and students to spend time engaged in these traditional Cree learning environments.

29. The Truth and Reconciliation Commission report also includes the following principle: "The preservation, revitalization, and strengthening of Aboriginal languages and cultures are best managed by Aboriginal people and communities" (14: iv). This principle is aligned with the Cree School board that specifies "the promotion and perpetuation of the Cree language and culture is the root of the Cree education system." [6]

30. JBCCS believes that the attainment of these goals, that is the preservation, revitalization, and strengthening of Indigenous languages and culture lies in the cultivation of an Indigenous media and telecommunications ecology. Digital technologies can be, and are often, used to strengthen relationships to language and traditions, as well as cultivate knowledge that will further benefit Indigenous communities.

31. Affordable and reliable access to the Internet is important and should be at the centre of federal policies regarding telecommunications and broadcasting, but that should not be the only end goal. The control and ownership over Indigenous cultural production, as well as

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[6]https://eeyoueducation.ca/org/who-we-are/our-philosophy

media and telecom networks, data, and other technologies is a part of Indigenous self-determination and sovereignty. Having access to radio spectrum is an important component to the development of Indigenous media and cultural ecologies.

32. Research on tribal use of Information and Communications Technologies (ICTs) in the U.S. has revealed how different histories, policies, and governmental paradigms are embedded in the design values and uses of ICTs by Indigenous peoples, and that colonial conditions have shaped the ways in which Indigenous peoples have access to information, networks and systems, and technologies.[7] It is important that Indigenous peoples have control over the design, implementation and maintenance over broadband networks so that Indigenous knowledge, forms of governance and innovation can be integrated into the technologies, systems, and networks.

33. As outlined above, access to radio spectrum is also a key component of the Cree Trapper Association's project. Hunting and trapping are integral parts of Cree culture. These activities are more than just the attainment of food, but part of a cultural network that includes family and kin, the land and animals, narratives and ontologies. CTA's proposal to maximize two-way radio coverage for their members living and hunting on their traditional territories is an important component in maintaining Cree language and culture, and consistent with goals of Indigenous self-determination and sovereignty.

Respecting and honouring Treaty relationships

34. The Truth and Reconciliation report also includes the principle that treaty agreements must be respected and honoured (10:vii). JBCCS would like to take this opportunity to remind ISED that the territory of Eeyou Istchee is covered by covered by the 1975 James Bay Northern Quebec Agreement (JBNQA). The JBNQA gives priority to "Native Harvesting" in which Indigenous peoples, including the Cree, Inuit, and Naskapi are guaranteed levels of harvesting equal to current levels of harvesting of all species in the Territory (JBNQA para: 24.6.2). The JBNQA also reserves exclusive rights in certain land categories. Native people have exclusive right to establish and operate outfitting facilities within Categories I and II and have a right of first refusal to operate as outfitters in Category III (24.9.3).

35. We feel that a similar regime for spectrum resources should be considered for Indigenous territories across the country. The Cree should be guaranteed access to radio spectrum that assists with the pursuit of traditional life ways and is consistent with the JBNQA. The Cree should have a right of first refusal to spectrum licensing in their territories as they do for outfitting operations and the harvest of wildlife.

36. It is important to acknowledge that digital technologies, infrastructure, and radio spectrum are integral to the maintenance and flourishing of Indigenous languages and culture in a digital world. It is also vital that government agencies such as ISED understand and re-

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[7]Duarte, Marisa Elena. *Network Sovereignty: Building the Internet Across Indian Country*. University of Washington Press, 2017.

spect Treaty relationships and Agreements when establishing policies such as radio spectrum access frameworks. Existing Treaties and Agreements with Indigenous nations and communities should influence and shape policy.

37. Finally, for the Canadian government to allow First Nations, Inuit, and Métis peoples close the respective digital divides on their lands, ISED and the CRTC need to give them the necessary tools to do so. This includes access to radio spectrum.

38. **Recommendations:**

- We fully support the introduction of the proposed Access Licensing framework, but request that ISED adopt a selection methodology that will allow smaller, independent operators such as not-for-profit; community; municipal; and cooperative networks to fulfill the needs of their regions as they are best suited to understand and address these needs.

- We believe that consultations on natural resources such as spectrum should trigger consultations with First Nations, Inuit, and Métis nations and communities as part of the policy proceedings, preferably before or during the "problem identification" and design of the policy proceeding.

- We encourage ISED to adopt an Indigenous privilege access window similar to that of the Tribal privilege access in the United States with fee waiver for Indigenous operators.

- We ask that ISED give first right of refusal to Indigenous communities in rural Tier 5 regions on the spectrum license applications affecting their territories, and ensure that those who chose to apply for a spectrum license have the necessary resources to successfully access the spectrum over their lands.

- We support a "use -it or lose-it" approach to spectrum licensing. If a licensee fails to begin deployment in the license service area within a pre-determined time frame, they risk losing it, and having it allocated to another service provider.

- We recommend that ISED adopt a flat fee mechanism for Access Licensing, similar to that implemented by OFCOM in order to simplify cost planning and administration.

- We encourage ISED to consider different policy mechanisms such as shared access licensing that will allow more than one mobile service provider to work in large Tier 5 regions.

- We ask that ISED respect current licenses and subordinate licenses for the 800MHz cellular and PCS bands in the implementation of the new Access License framework. That the introduction of the new Access Licensing framework not interfere with the deployment of wireless services by existing licensees (primary or subordinate).

- We also encourage ISED to develop the resources for Dynamic Spectrum Allocation (DSA) and a flexible spectrum management strategy. This will help improve the efficiency of spectrum usage in large ares with both high and low population densities.

- Because the development of telecommunications/media infrastructure, from a Cree perspective, is still in early stages of development, we believe that it is important that ISED be considerate of that fact. Broad changes in spectrum can have an impact on what can be built in the territory and trends of the broader country or province may not be indicative of the realities of Eeyou Istchee.

38. We thank ISED for the opportunity to contribute to this important consultation. This first intervention serves to establish our presence and voice in this proceeding. We reserve the right to respond to the questions posed in the consultation notice in more detail for the closing date for reply comments on December 7, 2021.

*** END OF DOCUMENT ***

October 26, 2021

Innovation, Science and Economic Development Canada
Senior Director, Regulatory Policy, Spectrum Licensing Policy Branch
235 Queen Street (6th Floor, East Tower)
Ottawa ON K1A 0H5

RE: Consultation on New Access Licensing Framework, Changes to Subordinate Licensing and White Space to Support Rural and Remote Deployment

Dear Sirs/Madams,

Sprig Learning welcomes the opportunity to provide the following comments to the consultation on New Access Licensing Framework, Changes to Subordinate Licensing and White Space to Support Rural and Remote Deployment (SLPB-004-21).

I am writing this letter on behalf of my organization, Sprig Learning Inc. We are an EdTech startup that focuses on providing early learners the skills to be able to read and understand basic math skills for later years. We provide this solution for all kids in Canada, however, we also provide this too many First Nations schools as we integrate culture and native languages as part of our curriculum.

Today we know that 1 in 5 kids will not complete high-school or post secondary due to the issues with oral language and math skills. Our program solves this in the early years not just for indigenous kids, but for all kids. We should also point out that fifty percent of high school students either can-not continue with their education due the lack of bandwidth or are sent to schools in the south where many are lost to social economic factors and results in only 1 in 10 graduating.

As the co-founder and CTO, we have had to build in aspects for dealing with teachers and students who do not have Internet or restricted access Internet. This is directly due the fact that many outlier communities are not provided Internet, bandwidth is low, or cost of service are direct impacts to gaining access.

For your consideration and based on our experience supporting remote schools, we would like to highlight some of contributing factors of the current approach to spectrum and telecommunications are that contributing problems. These are not provided in any specific order of importance.

      a. As Canada is so geographically disperse it quite costly for large telco's to invest capital in remote communities and as a result they don't provide solutions for many remote communities;

    b. Usage of non allocated spectrum by network providers is not permitted;
    c. Network coverage in remote areas is minimal, this is result and contributed both bullets 1 and 2;
    d. Due to the lack of connectivity, there are many Canadians who are not provided the means to improve their quality of life or be able to connect with family, friends, or colleagues. This very apparent for remote schools where access to information is very limited or access to networks limits access;
    e. Cultural and language is being lost due to lack of recording and sharing with younger generations.

While this is not a full list of issues it really focuses on some aspects that can be addressed while minimizing the impact to industry players (large or small).

Technology today provides a means for small remote towns and villages to setup and manage a local network that can provide for shared communication and means to connect to the larger Internet. It will further facilitate sharing of languages and culture which can be beneficial for locals who do not want to leave their communities to get an education or work with organizations globally.

From our experience of working with these communities they are much better served when shown how to support themselves rather than a handout. Our program is built on this approach and is foundational to our view of solutions to this problem.

The pandemic has shown us that we can be anywhere in the world and work for a company or organization. The ability for remote communities to provide expertise to employers could be significant including improving the quality of life for these individuals. The overall impact will be a net positive effect both on the local community and Canada as a whole. Canada is built on diversity and so should a solution to address any social-economic issue such as this.

Recommendations for consideration, again in no particular order of importance:

1. We would recommend the setup and operation of the First Nations Telecom Agency operated under Assembly of First Nations (AFN) or similar organization to coordinate telecommunications services to this distinct group. This group would offer the following:
    a. Funding from Federal, Provincial, and operational sources;
    b. Ability to leverage current spectrum for mobile and wireless devices in regions currently not served by large telcos. This would be via sub-licensing agreements with ISED or current spectrum holders at reduce rates as these service do not provide for a competitive solution but a single solution operator on a reservation or isolated communities;
    c. Provide a mechanism to purchase backhaul service to Internet exchanges and communications providers at a fixed rate to be reviewed on a regular basis to ensure cost coverage to providers. The providers of these services should be incentivized via tax credits or other means to provide this as a cost only service;
    d. Be self-managing but ensuring that all regulatory requirements are understood, implemented, and reported by this agency;
    e. This agency is not a for profit business or crown corporation but only setup to provide services to non-service regions.
2. Likewise, we recommend that Canadians who are outside the current support regions of big carriers be provided the opportunity to develop, build, and maintain community based networks to support their Internet and communication needs. This may include the following aspects:
    a. Ability to leverage unlicensed spectrum for signal technology using in community based network.

b. Ability to setup a not-for-profit community owned network operator to provide communication services for residence to stay connected especially in emergency situations.
c. Provide a means for local school networks to be setup and operated without the need for school aged kids to leave the protection of their caregivers and their community.
d. Provide a mechanism to purchase backhaul service to Internet exchanges and communications providers at a fixed rate to be reviewed on a regular basis to ensure cost coverage to providers. The providers of these services should be incentivized via tax credits or other means to provide this as a cost only service.

While these ideas might seem radical, we must face the reality that the large telco's are not necessary in all regions in a nation as large as ours. Local community based networks is such an option for many regions that will be never be serviced by our national big three operators due to lack of profitability.

Community based networks would pose no threat from an economic perspective to large telcos providing access via unlicensed and even licensed spectrum usage and needs to be considered as a solution. Not everything we have to do has to be for profit but to offer a means to improve the lives for all Canadians. New ways of approaching this problem are necessary.

If you require more information about our company please do not hesitate to contact me at faud.khan@spriglearning.com.

Sincerely yours,

Faud Khan

CTO and Co-Founder, Sprig Learning Inc.

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October 26, 2021

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Senior Director, Regulatory Policy, Spectrum Licensing Policy Branch
235 Queen Street (6th Floor, East Tower)
Ottawa ON K1A 0H5
Via Email: spectrumauctions-encheresduspectre@ised-isde.gc.ca

Re: Consultation on New Access Licensing Framework, Changes to Subordinate Licensing and White Space to Support Rural and Remote Deployment, August 2021

Please accept this letter as an indication of our support for the access spectrum licensing framework. Targeting under-utilized spectrum is an efficient and creative way to address spectrum scarcity in rural and remote areas.

While most Canadians have increased their reliance on technology to stay connected during the pandemic, reliable high-speed interconnectivity for an essential sector like agriculture continues to be a challenge. The agri-food sector needs access to wireless services so that they can capitalize on available digital tools to manage risk, optimize operations, share important agriculture data, and continue to secure the Canadian and global food supply, as well as be an economic driver for our country.

Precision agriculture, broadly defined as the collection and use of data and analytical software for agriculture, is a digital tool that is now available to farmers. Using software, farmers can more accurately address problems, like pests, by identifying and more precisely applying products to problem areas.

The use of digital systems to improve on-farm operations may also help the sector to address its chronic labour shortage. The use of on-farm management tools opens the possibility for people to work remotely, but these jobs will still require and rely on high quality connectivity.

Other on-farm digital applications can help the farmer to collect and share data on soil, water and carbon. Data collection is critical if Canada's agriculture industry is to become a key player in Canada's emerging carbon market and continue to be a world leader in on-farm climate solutions.

In addition to those tools that are used on farm, there are systems that track and trace agricultural products through the entire value chain and can help to respond to disruptive events, like the pandemic. For example, if data collected in real time during the production cycle were analyzed to inform retailers of ongoing challenges, this could help to manage disruptions throughout the value chain. Newly found operational efficiencies could translate into a more affordable food supply for the general population.

Despite the obvious benefits, the adoption of these technologies has been slower than its potential across Canada because farmers still lack reliable access to wireless services. As noted by the Canadian Federation of Agriculture, "A significant portion of primary producers in Canada lack access to broadband internet service, while a larger proportion are lacking access on a reliable basis."

While the connectivity gap is well understood by the Federal Government, the interdependency between broadband and next-generation digital agricultural technologies should not be lost within this policy discussion. The urgency of rural connectivity is not just about connecting individuals to one another, but

about facilitating the adoption of new technologies that will help farmers and the agriculture industry to better manage risk and secure our food supply.

With so many disruptors to the industry both ahead and ongoing, Syngenta is especially interested in ensuring that spectrum, which is a public resource, is used as efficiently as possible to the benefit of Canadian farmers and, ultimately, the public. Increased spectrum access in rural and remote communities is a powerful tool to ensure farmers have access to digital tools.

To this end, Syngenta strongly supports ISED's proposed access licensing framework if it is implemented in a way that prioritizes the need for farmers to fast and straightforward access to spectrum. In determining which service areas and bands are released first for access spectrum licensing, government should consider how that area is not only under-served, but how it serves a wider population. As it reads currently, the ISED will prioritize Tier 5 license areas and spectrum blocks for auction based on the size of the underserved area and the history of non-deployment. A consideration of how productive and important the geographic area is to the wider population should also be included in prioritizing which areas will be auctioned and combined with an operators' readiness and capacity to deploy in that area.

Syngenta offers only a few additional comments on the specific conditions of the licensing, including (license term), deployment requirements and transfer and divisions.

The proposed policy should be implemented with clear, straightforward criteria and carriers that are ready to deploy should they be granted access licenses immediately upon application. Syngenta encourages ISED to make all carriers eligible for spectrum access licenses, as long they have no un-deployed spectrum in the same band. We encourage the ISED to minimize administrative burden and implement high quality service standards.

Syngenta believes that the most appropriate way to ensure that licenses are not obtained as speculative investments is to introduce stringent deployment requirements. Stringent deployment requirements will encourage licenses to apply for licenses only in areas where they intend to provide service and are able to do so.

It is reasonable to expect an access licensee to deploy within one year and to serve a substantial portion of its licensing area. Syngenta is also generally in support of a license terms that is long enough to provide operators with the confidence to invest in building out the network infrastructure.

Syngenta broadly agrees with ISED's proposal to use Tier 5 areas for access licensing because these are remote and rural areas, however, the region should be able to be sub-divided to encourage deployment across the entire region. The ability of a licensee to sub-divide Tier 5 areas will permit operators to sub-license largely remote agricultural areas with a very small population. Primary licensees who do not intend to or are unable to deploy in smaller, less dense rural areas in the foreseeable future may choose to sub-license to other carriers that are interested in serving the farmer population within their region, but only once their own deployment requirements have been met.

Thank you for the opportunity to contribute. Should you have any questions or request any further documentation or support, please do let us know.

Amee Barber

cc. Christina Stroud, Head of Corporate Affairs

TECHNATION CA

Proposed Submission: ISED Consultation on a New Access Licensing Framework, Changes to Subordinate Licensing and White Space to Support Rural and Remote Deployment (SLPB-004-21)

October 26, 2021

Content

Submission of TECHNATION on the ISED Consultation on a New Access Licensing Framework, Changes to Subordinate Licensing and White Space to Support Rural and Remote Deployment

TECHNATION welcomes the opportunity to provide its comments on the ISED *Consultation on a New Access Licensing Framework, Changes to Subordinate Licensing and White Space to Support Rural and Remote Deployment.* We would welcome a follow-up discussion with your officials to discuss this submission.

TECHNATION plays a central role as the industry – government nexus for technology prosperity in Canada. Our goal is to unite technology, government, and community for Canada's future, by leading as a catalyst and conduit for the future of technology and innovation in Canada.

As a prominent advocate for the expansion of Canada's innovation capacity, TECHNATION encourages technology adoption to capitalize on productivity and performance opportunities across all sectors. A member-driven not-for-profit, TECHNATION has served as the authoritative national voice of the $230 billion ICT industry for over 60 years. More than 36,000 Canadian ICT firms create and supply goods and services that contribute to a more productive, competitive, and innovative society. The ICT sector generates over one million jobs directly and indirectly and invests $8 billion annually in R&D, more than any other private sector performer.

1. Introduction

This ISED consultation represents a timely intervention into spectrum licensing policy, particularly as it pertains to fallow spectrum in rural Canada. As the importance of technology and data continues to grow, it is critical that ISED, industry, and stakeholders share a deep understanding of the telecommunications policy underpinning the Canadian economy and how scarce spectrum can be best utilized for the socio-economic benefit of all Canadians. The increasing importance of wireless connectivity for day-to-day activity, particularly in the shadow of the COVID-19 pandemic, means that rural Canadians increasingly rely upon effective government spectrum policy to facilitate many of their activities. In this context, it is important to adopt policies which do not allow spectrum to sit fallow unnecessarily. Furthermore, as innovative use cases become feasible, Canada must ensure that it is an attractive place both for new models of service provision to arise, for new modes of doing business to take root, and for investment to take place with confidence. This requires spectrum policy to keep pace with technological development.

TECHNATION broadly welcomes the rationale for the proposals contained within the Consultation. The problem of undeployed and under-deployed spectrum in Canada deserves significant attention and, to the extent that the Consultation concerns mechanisms to address the existing weakness in policies that allow spectrum to sit fallow, they are encouraged. Furthermore, policy changes that streamline existing processes and seek to facilitate market-based subordinate licensing agreements between spectrum license holders and rural network providers, private networks, and industry verticals are both necessary and timely. However, we should also recognize the recent successes and growing momentum for rural deployments by Canada's facilities-based network operators, both through fully private investments and in partnership with all levels of government, with this caveat in mind, ISED is correct to reassess the overarching regulatory architecture for spectrum licensing.

With regards the specific content of the consultation, it should emphasize that voluntary commercial subordination remains the best option for secondary spectrum access, but 'use it or lose it' provisions akin to access licenses may have a role in encouraging such agreements. Nonetheless, some broad elements of the Consultation seem at odds with this outcome. For example, within Section 3 of the Consultation, ISED identifies core principles that guide the development of the proposals, to:

- ➢ Facilitate the deployment and timely availability of services across the country, with an emphasis on rural and remote regions

- ➢ Foster investment and the evolution of wireless networks by enabling the development of innovative and emerging applications

- ➢ Support sustained competition in the provision of wireless services so that consumers and businesses benefit from greater choice and competitive prices

While TECHNATION broadly agrees with these objectives, it is not evident that a sufficiently nuanced approach is being taken within the proposals. ISED correctly identifies that, to maintain a healthy and strong communications system fit for the 5G, innovation is essential and ISED must therefore remain equally innovative in its policy. At the same time however, this goal implicitly recognizes that telecommunications is a sector that is increasingly being disrupted by non-traditional business models and new models of service provision. Operators are increasingly having to seek new means of monetizing investments in 5G to make them worthwhile, with a greater focus on IoT and verticals. In these circumstances, it is striking that ISED appears to merely propose to continue its existing attitudes to choose and pricing competition, with little mind to the effect that these emerging uses have on competitive dynamics, nor the ways in which their existing policy is likely to distort the innovations that can take hold. New use cases and innovations may well turn upon businesses who hold spectrum reaching adequate economies of scale and scope to be viable. This does not appear to have been considered at all. Furthermore, the emphasis on 'choice' and 'price' competition ignores competition on the quality of networks which will be critical in innovative and emerging use cases.

The balance between ISED's stated objectives is also strained in the context of rural and remote connectivity. While it is important to foster choice and pricing competition where possible, the rapid improvement of networks heralded by 5G means that connectivity itself, followed by quality, must be the priority. A priority for connectivity should obviously mean awarding spectrum to companies with the strongest track-records of deploying rural and remote networks rather than experimenting with fostering entry with small, hyper-local uses of spectrum. Furthermore, quality competition is increasingly important not just because of innovation and new use cases, but because many existing online applications are likely to change. For instance, over 80% of users are expected to be using 5G in the next 5 years. As population centers rapidly access higher quality networks, online applications are likely to increasingly presume a level of connectivity that is a far-cry from rural connections. At a time when network operators are continuing to ramp up rural deployments, both market-driven and publicly supported, and 5G is providing new options for advanced public network services and innovative private network solutions, primary licensees require access to spectrum more than ever. There is little point in fostering competition between networks which are inadequate to provide the connectivity necessary for rural and remote populations to effectively engage with the online world, and the proposals need to be far more forward-looking. This is to say nothing of the unexplored tension between granting licenses for new use cases in contexts where rural and remote connectivity is generally found wanting. Any new framework must take these considerations into account.

Q1 'ISED is seeking comments on its proposal to implement a new Access Licensing framework to make licenses available in rural and remote areas where there is unused spectrum'.

Q10 'ISED is seeking comments on its proposal to impose a condition of license to prohibit existing primary and subordinate licensees' deployment in areas in which an access spectrum license has been issued.'

1. TECHNATION submits that the access license mechanism has the potential to be a positive step in increasing access to spectrum. Nonetheless, there are many shortcomings with the existing proposals.

   TECHNATION would like to express that a complex 'sharing' arrangement turning upon an imposed condition of license is manifestly inferior to the clarity provided by full, clean carve-outs of the initial license with concordant adjustment in the rights and responsibilities of both incumbents and access licensees. The proposed mechanism is unduly complex and far more likely to create unnecessarily unwieldy and complex relationships between incumbents, subordinates, and access licensees.

2. Furthermore, TECHNATION submits that it is essential that, prior to any action, the proposed Access Licensing framework is both clarified and reconciled with the practical reality of operations across all spectrum bands. A patchwork of different rights and obligations is extremely counterproductive, significantly raising costs for incumbent licensees, barriers to smaller operations who may benefit from the proposed mechanisms, and the burden on the government itself. The introduction of these mechanisms must take place within a holistic analysis of the problems with rural and remote deployment and create a consistent framework easily interpreted by all parties. This must include an account of how these mechanisms interact with the evident general necessity for stronger deployment conditions on future spectrum licenses to address issues with rural and remote connectivity.

3. In addition, the proposed Access Licensing regime does not adequately emphasize build plans of primary licensees and their commercial subordinates when discussing when spectrum will be deemed "available". In a worst-case scenario, primary licensees could complete new rural sites only to find their exclusively licensed spectrum is no longer available to them and thus damage rural and remote deployments. Any Access Licensing regime must fully account for primary licensees build plans, which should allow a minimum of 18 months when considering deployment on an 'immediate' basis (as suggested in para 45 of the consultation document).

4. TECHNATION must also emphasize that it should be considered what the proposed Access License framework does to the establishment of mutually beneficial market-based subordination agreements and vertical service provision in Tier 5 areas that may become access license eligible. It is important that ISED not establish a competing parallel framework of licensing that disincentivizes the formation of these arrangements. The result may be that parties who would otherwise form agreements and begin deploying delay in anticipation of more favorable terms under an access license. It is presumed that creating a mechanism for rural connectivity at war with itself is not ISED's intention. This is particularly pertinent if verticals or subordination agreements for innovative use cases compatible with 5G rollout become a major source of revenue for operators leveraging their investments in 5G.

Q4 'ISED is seeking comments on its proposed principles to be used when considering spectrum licensed or radio licensed bands where the proposed Access Licensing framework will apply.'
Q5 'ISED is seeking comments on other principles it should take into account when considering bands where the proposed Access Licensing framework will apply'.

5. TECHNATION submits that the framework should not apply retroactively to licenses already issued, save for after renewal of the initial license period. This is essential to protect certainty in the value of both existing licenses and future licenses. Retroactive changes to licenses where there is any realistic potential for deployment must be avoided if at all possible. This is absolutely paramount if access licenses are be widened to cover further bands.

6. With regards to applying the Access License framework to prospective spectrum licenses, TECHNATION is in favour of robust '*use it or lose it*' deployment requirements that ensure licensees are not permitted to unduly neglect portions of their spectrum in the initial license period. While an access license framework could form a part of this wider policy as some form of narrower *'use it or share it'*, the relationship between any such framework and deployment conditions must be clear at the outset of the license period.

7. TECHNATION would also like to submit, however, that despite their intended goal to improve the status quo, access licenses are manifestly inferior to more general deployment conditions designed to ensure that rural and remote deployment takes place at scale. The access licensing proposals must not distract from a wider review of spectrum policy to promote rural network deployment, including the imposition of meaningful and enforceable deployment conditions.

Q2 'ISED is seeking comments on its proposal to issue access spectrum licenses and access radio licenses on a first-come, first-served basis.'

Q8 'ISED is seeking comments on any future adjustments to the license areas for access spectrum licenses, including consideration of more localized areas (e.g. smaller than Tier 5).'

Q14 'ISED is seeking comments on its proposal to issue access spectrum licenses with a three-year license term and the proposed wording of the condition of license above.'

Q16 'ISED is seeking comments on its proposal to align the deployment conditions for access spectrum licenses with the relevant conditions of license currently applied to the licenses in the specific band, taking into account any differing characteristics such as Tier sizes, and the timing as to when those deployment requirements should apply. ISED is also seeking comments on the appropriateness of existing deployment requirements for private networks. ISED will consider alternative proposals for the deployment requirements for access spectrum licenses. Such proposals should contain a rationale and discussion of their implications for ISED's policy objectives.'

8. TECHNATION submits that the suitability of any license period issued on a first-come, first-served basis will depend entirely upon the band at issue, the area under consideration, the use case proposed, and the deployment conditions.

9. As the Consultation suggests, access licenses should be accompanied by robust deployment conditions to ensure that the mechanism succeeds in promoting rural and remote connectivity. TECHNATION would be in favour of even stronger conditions than those suggested in the Consultation with shorter timeframes, as short as 6 months, to ensure that access licenses are granted only to those entities who are in a position to deploy at the time the license is granted. Requiring zero deployment until after a full year means that a third of the 3-year license period will have elapsed before any assessment is made and, by the time any penalty is imposed and the failure rollout is meaningfully remedied, a huge portion of the period will have elapsed. This is particularly problematic when licenses can be taken on a first come, first served basis. Automatic revocation of access licenses under an 'access use it or lose it' framework may also simplify the process of remedying a breach of access license deployment conditions. These conditions are necessary to ensure that the Access Licensing framework meets its stated objective of increasing rural connectivity and does not allow licenses to be sought prematurely to hedge in case an operator wishes to deploy at some later date. Any Access Licensing regime must not incentivize speculative and anti-competitive behaviour by prospective access licensees

10. TECHNATION agrees that, to ensure that access licenses truly promote rural connectivity, deployment obligations must match those population coverage requirements in the incumbent license. Granting a Tier 5 access license on a first come, first served basis without meaningful population coverage requirements risks undermining the potential for access licenses to meaningfully promote connectivity in the area. A simple obligation matching process also makes it easier for potential access licensees to assess their capacity to meet deployment conditions prior to attempting to obtain an access license and makes assessments of eligibility more straightforward. This will allow the process to be expedited.

11. TECHNATION would like to express concern about the role of private networks in the proposed framework. A situation in which a private network is allowed to deploy on a first-come, first-served basis when there is potential for the provision of broader connectivity in a rural area must be avoided. TECHNATION proposes that, rather than using access licenses, private networks should be provided for though the use of spectrum alternatives such as license exempt, WBS or white space.

12. TECHNATION recognizes that in the future, in some spectrum bands, it may be practicable to grant access licenses at a more granular level than Tier 5 license areas. TECHNATION supports always granting any access licence on as small an area as possible, preferably as site-based licensing only, and ensuring there are adequate safeguards against interference. Emphasis must always be placed on general connectivity over private networks, as private networks can still avail themselves of commercial subordination where coordination is possible.

Q15 'ISED is seeking comments on its proposal that access spectrum licenses not contain transfer, subdivision or subordination privileges.'

13. TECHNATION would like to express concern that access licensees will under no circumstances be permitted to sell, subdivide or subordinate their access licenses. In circumstances where, for example, there is the potential to experiment and innovate with verticals or private networks, a prohibition on sale imposes a significant disincentive antithetical to experimentation with novel means of providing rural connectivity. A more nuanced, case-by-case approach is preferable, even if this requires that ISED approve mere subordination agreements in the case of access licenses.

14. TECHNATION would like to express concern about the circumstances in which a Tier 5 area would be considered eligible for access licenses. There are three parts to this concern:

(a) Firstly, previous ISED analyses have suggested that spectrum in a Tier 5 area is not being used purely on the basis that there is no network infrastructure used by the licensee in the area. In reality, infrastructure in neighboring Tier 5 areas have been providing coverage and using the relevant spectrum. ISED needs to provide a robust and transparent account of how it will determine when spectrum is unused and the means by which this can be challenged during any access licensing procedure.

(b) Secondly, and relatedly, it is unclear from the proposal whether there will be a periodic review of licenses by ISED determining which Tier 5 areas will be earmarked for access licenses, or whether the designation as access license eligible may be initiated by requests from potential access licensees. As above, it must be considered what this process does to the establishment of mutually beneficial market-based subordination agreements in Tier 5 areas that may become access license eligible. ISED must not establish a competing parallel framework of licensing that disincentivizes the formation of verticals or subordination agreements. The result may be that parties who would otherwise form agreements and begin deploying delay in anticipation of more favourable terms under an access license. This is particularly pertinent if verticals and/or subordination agreements for innovative use cases become a major source of revenue for operators leveraging their investments in 5G.

(c) Thirdly, as above, the proposed Access Licensing regime does not appear to adequately contemplate new deployments by primary licensees and their commercial subordinates when evaluating whether spectrum is available. Under the current proposals, there is insufficient clarity on how ISED will ensure operators are not nearing the completion of one or more new sites or adding radios to existing sites when an area begins to be considered under the Access Licensing framework. Only at the time that the access licence is granted, or perhaps only when the access licensee starts interfering with the primary licensee's deployments may the issue potentially be discovered. Any Access Licensing regime must include discussions with the primary licensee and accommodate a minimum 18 month build cycle.

Q12 'ISED is seeking comments on the above options for eligibility.'
Q13 'ISED is seeking comments for Option 1 and Option 2, specifically should the deployed and/or undeployed spectrum be based on any frequency band (e.g. 2500 MHz) currently held by the applicant or only the band (e.g. PCS band) for which the application is made?'

15. TECHNATION submits that a major issue with the proposed access license regime are the proposed 'eligibility requirements'. Both a requirement that spectrum be fully deployed or that incumbent licensees be entirely excluded, regardless of the band in question, are unwarranted and counterproductive. The Consultation is framed as addressing rural and remote connectivity, but the eligibility requirements seem entirely focused upon the potential for an increase in rural competition from small providers. This potential simply does not exist in many underserved Tier 5 areas. If the subordinate licensing regime is functioning as it should, there are legitimate questions as to why a subordination agreement has not been formed with a small provider where spectrum is entirely unused. Unless the demand simply does not exist or the subordinate licensing regime is not functioning as it should, this is difficult to explain.

16. If the issue is the subordinate licensing regime, then this should be the focus of reform. Assuming that subordinate licensing mechanisms are functioning properly, it would seem exceptional that demand will materialize simply because access licenses rather than subordination agreements are available unless, as above, the mechanism is at war with itself as parties delay deployment to get better terms under an access license.

17. Given the above, TECHNATION would submit that, if access licenses are accompanied by robust deployment requirements, it is unnecessary to exclude any party from eligibility. It is entirely counterproductive to exclude companies with a strong record of deploying network infrastructure who are best placed to make use of spectrum, particularly if this means that spectrum will continue to sit fallow due to a lack of demand. Even if a network provider has not fully deployed across, for example, an entire Tier 4 area in even the same band, this does not mean that within a Tier 5 area in which the operator has deployed rural Canadians would not benefit from the higher quality coverage that additional spectrum brings.

18. TECHNATION would submit that, if the concern is that incumbents will obtain access licenses motivated by preventing entry, it seems more appropriate to use different mechanisms on a case-by-case basis than to impose a blanket exclusion on incumbents.

Q43 'ISED is seeking comments on the potential or actual benefits of subordinate licensing to increase rural broadband access and accommodating new innovative network usage.'

19. TECHNATION submits that subordinate licensing agreements, alongside verticals, stand to become a major means of justifying and capitalizing on investment in 5G infrastructure which may allow the subordination of unprofitable areas covered by a license or dedication of slices of networks. This is particularly the case given the potential for synergies between retail wireless, industry, agriculture, and healthcare businesses. However, 5G also means that primary licensees need their spectrum more than ever to continue deploying public network coverage and service their own private network customers. Secondary spectrum access should remain on the basis of commercial negotiating to allow licensees that have invested significant amounts of capital into exclusive spectrum licences are able to gain a fair and equitable return on their investments.

Q44 'ISED is seeking comments on ways in which to streamline the general application requirements for subordinate licenses as set out in sections 5.6.3 and annex D of CPC-2-1-23. ISED also seeks proposals to streamline the application process for all subordinate license applicants, including those in commercial mobile bands who must also provide material addressing the criteria and considerations in section 5.6.4 of CPC-2-1-23. In these proposals, ISED also seeks comments as to how parties can demonstrate (e.g., an attestation, or other commitment) that their request for a subordinate license does not constitute a transfer, deemed transfer, or prospective transfer as discussed in section 8.2.1 above.'

20. TECHNATION welcomes any attempt to facilitate market-based subordinate spectrum licensing agreements. The major barrier to subordination agreements is the ongoing ambiguity of the nature of 'deemed transfers'. As a result of this ambiguity, costly administrative procedures are required for transactions that are otherwise only marginally commercially viable for incumbents and which, in reality, do not require such a comprehensive review. ISED's own processes impose prohibitive costs on many otherwise commercially viable subordinate licensing agreements and result in fallow spectrum. A clear framework or even a safe-harbour template that guarantees compliance which could be easily plugged-in to any particular agreement and avoid an administrative burden would significantly improve the situation.

Q45 'ISED is seeking comments on facilitating subordinate licensing and encouraging secondary market transactions including: Should additional changes be made to existing licenses that will encourage the use of subordinate licenses as a means to help deploy more services? Given ISED's regulatory role, are there any issues or actions ISED should consider?'

21. While TECHNATION acknowledges that responses to requests concerning subordination agreements should be encouraged, it is incorrect to focus on the lack of responses from incumbents as the source of friction. As above, it is often more expensive for the incumbent to proceed with the agreement than to leave spectrum unused. No party benefits from incumbents being required to repeatedly disclose this. The solution lies in addressing the administrative burden, not increasing it.

22. TECHNATION would also assert that a further source of friction is that requests are often aimed at parties who are in fact using spectrum in the relevant area. Subordinate licensing arrangements would be greatly facilitated by robust and accurate summaries of spectrum usage provided by ISED in a clear, easily accessible, and up-to-date form. This would allow parties interested in subordinate licensing agreements to better ascertain *ex ante* which parties have fallow spectrum in an area. Potential licensees would be much better served by the provision of this form of information by ISED than interventions in information requests between businesses.

Le 12 octobre 2021

Innovation, Sciences et Développement économique Canada
a/s de la directrice principale, Politique de réglementation
Direction générale de la politique des licences du spectre
235, rue Queen, 6ᵉ étage, tour Est
Ottawa (Ontario) K1A 0H5

Objet : Consultations sur le cadre de délivrance et les conditions des licences de systèmes cellulaires pour soutenir le déploiement dans les régions rurales et éloignées

Madame,

Nous vous faisons part de nos commentaires au sujet des consultations menées actuellement par Innovation, Sciences et Développement économique Canada concernant le nouveau cadre de délivrance des licences d'accès au spectre de fréquences et ayant pour but de soutenir le déploiement dans les régions rurales et éloignées.

L'accès à des services de téléphonie cellulaire performants et abordables partout en zone rurale et forestière revêt une grande importance pour l'Union des producteurs agricoles, car il y va de la sécurité des producteurs agricoles et forestiers qui travaillent souvent seuls et de façon isolée dans les champs, en forêt ou dans leurs bâtiments d'élevage. Toutefois, il faut constater que ce type de services est soit non accessible sur tout le territoire agricole et forestier québécois, soit offert dans certaines régions rurales à des prix plus élevés.

Outre cette question de sécurité, de plus en plus de producteurs agricoles et forestiers ont besoin de l'accès à Internet ou à leur téléphone intelligent pour diverses fins, soit pour l'utilisation des technologies de l'agriculture de précision, pour la transmission de données, souvent à la demande des divers paliers de gouvernements, pour la surveillance des équipements et du bien-être de leur troupeau ou pour l'obtention d'informations sur les conditions météorologiques.

Au printemps 2021, les gouvernements québécois et canadien ont mis en place l'Opération haute vitesse qui vise à brancher, d'ici septembre 2022, plus de 166 000 foyers à un réseau Internet haute vitesse et nous saluons cette initiative qui vise à combler les activités de déploiement Internet au Québec.

Cependant, le déploiement sur tout le territoire de la téléphonie cellulaire devrait, lui aussi, bénéficier d'une attention accrue du gouvernement canadien. C'est pourquoi les consultations

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actuelles représentent un jalon intéressant si l'objectif est de faciliter un meilleur accès au spectre de fréquences inutilisé dans les régions rurales et éloignées et d'accroître la compétitivité des services. Nous sommes au fait que plusieurs portions du spectre de fréquences sont déjà sous licence et que leur utilisation est déjà acquise par les fournisseurs de services qui les détiennent. Toutefois, la non-utilisation d'une partie de ces licences, notamment dans les régions rurales et éloignées pour lesquelles leurs détenteurs n'ont pas développé de services, est préoccupante.

C'est pourquoi il est primordial de bien identifier les portions inutilisées du spectre de fréquences, et la proposition de le faire sur la base du territoire des municipalités rurales nous semble intéressante. Ce travail permettra de distinguer les portions du spectre de fréquences actuellement libres de licence de celles détenues par licence, mais qui ne seraient pas utilisées par leur détenteur. Les portions libres de licence devraient être offertes en priorité aux fournisseurs locaux sur le principe du « premier arrivé, premier servi » pour accroître la concurrence dans ces zones. Si certaines ne trouvent pas preneur, elles pourraient ensuite être offertes aux grands fournisseurs.

Toute licence, qu'elle soit déjà octroyée ou non, devrait être assujettie à des conditions visant à assurer une offre de services dans les secteurs où ils ne sont pas offerts actuellement. Lorsqu'une licence est détenue par un fournisseur dans une fréquence ou dans une région déterminée et que le service offert n'est que partiel, son renouvellement, après sa période de validité, devrait ainsi être assujetti à la condition d'extension du service aux zones sans service.

En somme, Internet et la téléphonie cellulaire sont désormais considérés comme des services essentiels. Il est alors primordial que le gouvernement canadien assure un accès abordable à des services de téléphonie cellulaire performants en établissant un cadre d'octroi des licences de spectre de fréquences permettant une plus grande compétitivité et un déploiement étendu des services dans les régions rurales et éloignées.

En vous remerciant de l'attention que vous porterez à nos commentaires, nous vous prions d'agréer, Madame, nos salutations distinguées.

Le directeur général,

Charles-Félix Ross, agr., M. Sc.

Innovation, Science and Economic Development Canada
Senior Director, Regulatory Policy, Spectrum Licensing Policy Branch
235 Queen Street (6th Floor, East Tower)
Ottawa ON K1A 0H5

Subject: Canada Gazette, Part I, August 2021, Consultation on New Access Licensing Framework, Changes to Subordinate Licensing and White Space to Support Rural and Remote Deployment, SLPB-004-21)

Dear Senior Director, Regulatory Policy, Spectrum Licensing Policy Branch,

On behalf of the Western Canadian Wheat Growers Association, I am submitting our perspectives on the consultation of "New Access Licensing Framework, Changes to Subordinate Licensing and White Space to Support Rural and Remote Deployment" for your consideration.

The Western Canadian Wheat Growers Association (WCWGA) welcomes and fully supports this consultation to arm the Canadian Agriculture sector to compete in a much more connected and competitive space. WCWGA appreciates the opportunity to provide input.

WCWGA is an agriculture policy advocacy group of volunteer "opt-in" farmers. Celebrating 51 years of active agriculture advocacy and policy development, all of our members choose to voluntarily join the WCWGA and support our work with a membership fee that comes out of their own pocket.

Although "Wheat" is in our name, and was a significant foundational component of our organization, the WCWGA members represent all major grains, which is relevant as the enhanced capabilities increased spectrum will bring, cover a variety of commodities.

As farmers, we understand the importance of rural connectivity to both the existing and future competitiveness and prosperity of grain growers, suppliers, processors, and marketers. As you know, the adoption of precision agriculture technology continues, and there is significant interest in incorporating precision agriculture tools for both predictive analytics and management decisions.

As precision agriculture develops, delivering higher yields with more targeted inputs, the lack of sufficient rural internet access and reliability is impeding Canadian wheat growers' ability to adopt these vital tools. This delayed adoption is hurting Canadian farmers by increasing the inputs and labour required to grow crops. Where precision agriculture has been adopted, farmers see higher yields, better and more precise use of fertilizers and pesticides, and reduced time spent by farmers and their staff. **Our Board of Directors regularly share examples of the crippling impact of poor**

connectivity, both from their office in the farmyard, as well as their "mobile offices" in the cabs of their equipment.

On the proposed changes in this consultation, we want to underline the main purpose of such a consultation – get rural communities connected as fast as possible. While ISED has asked a number of incredibly interesting and important questions about its proposed policy, we will limit our feedback to questions four and five, given that our input is on the principles of the approach being taken, rather than on the technical elements of the proposal.

Rural connectivity has been a key issue we have all been discussing for the last decade. With commitments for rural connectivity deployment by 2025 from Canadian political leaders, we know the will is there to get it done, but some of the proposed recommendations seem too restrictive for faster rollout. WCWGA believe in the power of **competition**, and as such recommend the following actions be taken by ISED to support rural connectivity:

- This consultation suggests making this spectrum available to a limited few. Spectrum licenses, including access licenses proposed in this consultation, should be available to **anyone who is willing, able, and committed to build** the infrastructure and deploy the spectrum.
- Spectrum squatting has delayed our businesses and rural communities from taking advantage of high speed internet access. We recommend implementing use-it-or-lose it policies for **every** telecom operator who holds **any** spectrum band licensed for a renewed term, to ensure rural communities get connected now rather than 5 years from now.

Canadian farmers need wireless internet access, and we need it now. That is our top priority from a telecommunications perspective. Let's not limit the resources that can be used to get the job done. Let's create policies that will hold all operators accountable for meeting commitments they make when they bid for rural spectrum to end the digital divide.

The Western Canadian Wheat Growers Association gratefully submits these recommendations for the "New Access Licensing Framework, Changes to Subordinate Licensing and White Space to Support Rural and Remote Deployment". We look forward to the opportunity to discuss these recommendations further.
Further information regarding the WCWGA may be found at: www.wheatgrowers.ca

Sincerely,

Dave Quist
Executive Director

WCWGA