



January 11, 2019

The Broadcasting and Telecommunications Legislative Review Panel
c/o Innovation, Science and Economic Development Canada (ISED)
235 Queen Street, 1st Floor
Ottawa, ON L1A 0H5

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RE: Broadcasting and Telecommunications Legislative Review Panel: Call for Comments

The **Canadian Electronics and Communications Association (CECA) / Association Canadienne de l'électronique et des communications (ACEC)** is pleased to provide written comments from its members to the Broadcasting and Telecommunications Legislative Review Panel, in addition to the oral submission which our Chair of the Board and President provided to the Panel on November 14, 2018.

We commend the Minister of Innovation, Science and Economic Development (ISED) for inviting and encouraging industry both to appear before the Panel and to provide comments on this very important matter.

CECA is a not-for-profit industry association representing manufacturers of electronics and telecommunications solutions. CECA member companies create and innovate, market, manufacture and deliver wireless products and services that make up a significant part of the Canadian digital economy by creating over 10,000 high-value jobs and over \$1billion in R & D annually. As a single entity representing most of the manufacturers within the Canadian Wireless infrastructure industry, CECA, speaking with one voice can advise ISED directly and through the Radio Advisory Board of Canada (RABC).

CECA members are major multi-national and global companies and bring world-wide expertise and experience to discussions with Canadian legislators and policy makers. Members recognize that the review and modernization of the legislative framework for broadcasting, radiocommunications and telecommunications is vital for Canada to adapt to the rapidly changing technological environment. A new framework needs to ensure that the new and emerging technologies that have changed and will continue to change the way we do business and the way Canadians connect with each other can provide access to all Canadians and at reasonable cost.

Modernized legislation will enable Canada's broadcasting, radiocommunications and telecommunications industries to better respond to the disruptive changes and the opportunities that the rapid growth of wireless technologies and a connected world bring. Members appreciate the

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opportunity to contribute their knowledge and expertise in answering key questions in the context of radiocommunications and telecommunications such as: How best to provide rural and remote coverage? How to provide access to passive infrastructure in a 5G world? How must safety, security and privacy be addressed? and What needs to be in place for core networks and effective spectrum management?

Therefore, CECA comments will focus on the first seven questions which are most relevant to member companies in the Terms of Reference for the Legislative Review and that centre on the *Radiocommunications Act* and the *Telecommunications Act*,

Questions

1.1 Are the right legislative tools in place to further the objective of affordable high-quality access for all Canadians, including those in rural, remote and Indigenous communities?

Current CRTC Telecom Regulatory Policy (2016-496) requires that internet speeds of 50 megabits per second (Mbps) download and 10Mbps upload, with the ability to subscribe to a service offering an unlimited data allowance, should be available to 90% of Canadian households by the end of 2021.

To meet these requirements, the service providers build coverage in the highest population areas first, where return on investment is highest. Sometimes percentage coverage goals can be met without covering rural/remote/indigenous areas.

In remote and rural communities at the edge of the network today, coverage can be extended by approved enhancement devices. However, enhancement devices can only extend the network coverage and cannot improve the capacity of the network; cellular internet remains a high-cost alternative from the end-users' perspective with no options for fixed price unlimited monthly.

Ultimately some combination of wireless and fibre will be required to serve users at the edge of the network, but service to underserved communities envisioned by 2016-496 is not likely to be met by 2021 under the current rules. Existing legislation alone will not solve the problem.

While CECA is not expert in universal service policy, it has long been apparent that different forms of subsidies are needed to extend networks into rural, remote and indigenous areas.

For some extremely remote communities, satellite may be the only option. For many, particularly in rural areas not far from cities, fibre to the home is the mechanism for the highest access speed, but before that is possible, a high-capacity fibre core network extending to the "anchor" villages/towns will be required to provide the capacity close enough to the community so that distribution on wireless to the user can provide enough throughput. Building such a network to remote/rural/indigenous communities will not be achieved unless the required return on investment for carriers is addressed and this will require subsidies.

Recommendations:

1. That existing programs for rural broadband such as “closing the Broadband Gap”, “Connect to Innovate” and “SWIFT” be continued and that new programs be developed
2. That legislation on percentage population served and data rates required be retained as the proper metric within the current legislative requirement while new legislative density requirements need to be included specific to rural and remote areas
3. That any future legislative proposals ensure that national policy requires a technology neutral approach. While not all technology platforms will have equal ability to address specific deployments, there is no doubt that wired and wireless (including satellite) platforms each have important roles to play.

1.2 Given the importance of passive infrastructure for network deployment and the expected growth of 5G wireless, are the right provisions in place for governance of these assets?

5G is the new generation of radio systems and network architecture. It supports different use cases and business models, such as end-user data connectivity, driverless cars, video, internet of things, mobile health, and safety, to name a few. 5G can deliver extreme broadband, ultra-robust low-latency connectivity and massive networking. There is significant global competition to deploy 5G networks that are vital to the next giant step forward in wireless technology.

5G systems achieve very high throughput by using small cells that have a much shorter range than any solutions currently deployed, including existing 4G LTE systems, which themselves have higher throughput and shorter ranges than previous solutions. The short range of the 5G systems results in a densification of wireless networks and a need for mounting locations for antenna systems. This places new demands on passive infrastructure.

The critical need for access to infrastructure, such as buildings, light standards, Hydro poles and right-of-way is set to increase rapidly. There needs to be a national, non-discriminatory/fair framework with timely and efficient access approval processes in urban areas for small cell deployment.

The need for ensuring timely and fair access to passive infrastructure is linked to the issue of universal service and access.

Although the cost of building and maintaining the physical site to mount and operate small cell radio infrastructure is much lower than the cost to build and maintain previous radio communications infrastructure, the number of sites required to cover a given area and the potential absence of suitable infrastructure in many rural and remote areas might have the effect of further exacerbating the digital divide, especially in a country with Canada’s geographic profile.

Recommendations:

1. That subsection 43(5) of the *Telecommunications Act* be revised to ensure that CRTC has clear authority to establish enforceable national policy with respect to publicly-owned or publicly-

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funded passive infrastructure to ensure cost predictability, timing predictability and regulatory consistency across technological platforms.

2. That the *Telecommunications Act* ensure that access to municipal/utility property is fairly regulated and administered to all wireless service providers.
3. That the *Telecommunications Act* clearly define “transmission facility” to specifically add references to wireless infrastructure.

2.1 Are legislative changes warranted to better promote competition, innovation, and affordability?

Canadian Government policies and regulation can be catalysts to promote the introduction of innovative new markets, products, systems and services that would potentially grow the digital economy.

Encouraging utilization of innovative new technologies requires that the government keep an innovation goal at the forefront of its policymaking activities. For example, releasing spectrum bands and equipment certification standards in a timely manner is very important to address innovation and job creation.

CECA acknowledges ISED’s recognition of the problem and its consultation paper in which it proposes to change to a consumption-based fee structure. This move would encourage the use of new spectrum bands and enable the use of the larger channel sizes needed to meet increased throughput demand.

Recommendations:

1. That the *Telecommunication Act* and the *Radiocommunication Act* should support an ISED Innovation agenda
2. That with respect to Research and Development capability:
 - ISED should have the statutory authority to support and reward companies that develop new products and services with grants, incentive programs and recognition programs.
 - ISED should be able to provide periodic recommendations to Parliament with respect to tax treatment of R&D expenses.
 - As a policy matter, ISED should be directed to encourage a climate of innovation for new products with more flexibility in certification and licensing while ensuring a reliable, cohesive system
 - ISED’s Intellectual Property Office should protect intellectual property by striking the right balance between the interest of innovators and the wider public interest
3. That ISED should be directed as a policy matter to ensure timely release of new spectrum and standards across a range of wireless use cases
4. That ISED should be directed as a policy matter to set licensing fees in a manner that is intended to cover the actual cost of managing spectrum and that incentivize efficient use of spectrum.

3.1 Are current legislative provisions well-positioned to protect net neutrality principles in the future?

Net Neutrality is the principle that Internet Service Providers (ISPs) should treat all data on the internet equally, without differentiating traffic based on speed, cost, latency, etc., regardless of the user, content, site, platform, application, type of equipment, or mode of communication.

Net neutrality and universal access are related concepts, linked by the principle that equal access to information is a fundamental component of a just, open, healthy and safe society in the 21st century.

Canada needs to support a framework for net neutrality that provides Canadians with access to the content, applications, and services they want, while ensuring that ISPs are properly incentivized to continue to invest, experiment, differentiate, and innovate by providing:

- Canadians with access to lawful content, applications, and services they want;
- Operators with the freedom to manage their networks to assure that their users receive the quality and access that they have demanded; this is even more important with 5G networks providing services for different types of users with different network capabilities (bandwidth, speed and latency)
- Content and Application Providers with an environment that allows for customized experiences based on the demand of their customers.

CECA supports the RABC's position for a "... net neutrality framework that allows and incentivizes innovation, customization and investment in networks while at the same time creating networks without unjust discrimination or undue preference".

CECA members believe that the *Telecommunications Act* has generally stated statutory provisions that have been effective over time in enabling CRTC the flexibility required to address changing concerns and rapidly changing technological advancements, including net neutrality. Network management is a key factor and these legislative tools have allowed government and regulators the flexibility required.

Recommendation:

- 1. That any revisions to the *Telecommunications Act* should ensure that the current flexibility is maintained to enable effective network management.**

4.1 Are further improvements pertaining to consumer protection, rights, and accessibility required in legislation?

CECA members believe that to the extent the statutory recommendations support addressing accessibility, the statute makes clear that future regulatory policy must consider the technical feasibility, over time, of achieving accessibility goals.

In a connected world, many devices today and many more tomorrow, such as touch screen, voice commands, motion controllers can provide access to those with accessibility challenges. Advanced

technology will bridge the gap between people. This will require a shift in current policies to a policy framework that requires internet access for all Canadians. 5G has incredible potential on the issue of access to the internet and IoT for all.

5G isn't just faster but also more responsive. This massive move to connectivity is dependent on reliability on a huge scale to ensure that systems don't go down.

Canadians, both consumers and business are increasingly concerned about privacy issues, including cybersecurity threats. Legislation and policy must address these issues and the time is now before full deployment of 5G happens.

CECA members believe that there needs to be more attention paid to and stricter enforcement on counterfeit products in the Canadian marketplace. Un-tested, non-compliant and potentially unsafe products put consumers at risk.

Recommendation:

- 1. That Legislation must address protections for consumers and business as well as privacy and cyber security.**

5.1 Keeping in mind the broader legislative framework, to what extent should the concepts of safety and security be included in the Telecommunications Act/Radiocommunication Act?

Best practices are being developed by global manufacturers, network operators and technology companies to advance security of devices and networks for the protection of consumers and businesses.

The task of network security grows in complexity as the network grows and as the threats constantly evolve. Government must look to flexible solutions based on risk management principles such as mitigating risk and exchanging threat information. Legislation needs to address standards concerning safety and security of telecommunications and radiocommunications systems given their transportation of financial and personal information. When these networks are carrying command and control communication from human to machine or machine to machine, such as 5G networks, security breaches resulting in tampering with or disrupting the flow of communications could have disastrous consequences.

CECA members urge that a broad consultation process on how to handle security take place as soon as possible.

Public Health, Education, Public Safety and National Security are non-commercial users and systems whose operational needs also include spectrum requirements. Currently, the *Telecommunications Act* and the *Radiocommunications Act* do not recognize the need for and use of wireless spectrum even though spectrum policy allows these users to obtain spectrum for their own uses. By contrast, these services are included in US Telecom legislation.

Legislation should recognise these services and ensure that spectrum can continue to be allocated to them. As demands for spectrum from every type of user increase, depending on the use case, spectrum policy should remain flexible to allow for sharing of spectrum between commercial or non-commercial users or dedicating spectrum, whichever results in the highest benefit to Canadians.

Canadian regulation has to be cognizant of the fact that there are various existing systems whose operational continuity is critical to safety and that any sharing with new services has to be approached with a mind to interference protection and the preservation of the integrity of the existing services.

CECA members would support legislation that references the critical importance of telecommunications and radiocommunications to the prosperity of the country and that security standards need to be legislated.

Recommendations:

- 1. That section 7, policy objectives, of the Telecommunications Act be expanded to include security of network infrastructure. For example, 7b could be written as “. . . render reliable, secure and affordable telecommunications services of high quality, accessible to Canadians in both urban and rural areas in all areas of Canada.”**
- 2. That new sections be added to both the *Telecommunications Act* and the *Radiocommunications Act* to address the critical concerns of security, privacy, protection of personal information and intellectual property. In order to achieve this legislation, a multi-stakeholder consultation must take place to assist in the development of the legislative requirements.**
- 3. That the *Telecommunications Act* and the *Radio Communications Act* be amended to include the distinct and unique role of wireless spectrum for public protection and disaster preparedness (PPDR) and recovery as part of the policy to maintain Canada’s identity and sovereignty.**

6.1 Are the right legislative tools in place to balance the need for flexibility to rapidly introduce new wireless technologies with the need to ensure devices can be used safely, securely, and free of interference?

The introduction of new users and new services/technologies will lead to an enormous demand for spectrum, which is a finite resource that is a requirement for every commercial and private wireless system.

Spectrum demand will expand beyond the traditional telecom industry to include vertical industries such as manufacturing, transportation, healthcare, and education. These vertical industries have not been involved before in spectrum discussions, concerns or management issues which will create a very complex environment going forward on managing spectrum needs and competing priorities.

Canada needs innovation and requires a well-defined environment under which innovation can be fostered, promoted and enabled. Regulators should consider a framework or program to enable new, innovative devices and products that don’t easily fit into existing frameworks to be certified and

licensed. The certification and licensing process should ensure that these new devices can be seamlessly introduced to existing bands without disrupting existing services.

CECA understands that there will be challenges to modernizing and streamlining the spectrum licensing regime, but enabling the next wave of wireless communications requires that it be done. CECA applauds ISED for its proposal to move from a capacity-based fee structure to a consumption-based fee structure that encourages spectral efficiency and innovation.

Canada requires world-class networks and pressure will be on government and regulators to manage the supply and demand.

Recommendations:

- 1. That legislation require that every three years a review must be undertaken by ISED of the licensing regime given the expected massive changes in infrastructure and products once 5G is completely a reality. In the meantime, ISED must initiate modernizing and streamlining the licensing regime to develop a new fee structure disassociated from throughput, as they have proposed in DGSO -001 -18**
- 2. That in recognition of the rapid technological advancements happening, and that as a vital policy matter ISED enable new products and devices that don't fit into existing frameworks to be licensed and certified, but require testing to ensure protection of existing licensed systems**
- 3. That as a key policy initiative ISED develop a framework on how to manage limited spectrum resource in the face of ever-increasing demand of spectrum from an array of products with varying operational characteristics**

7.1 Is the current allocation of responsibilities among the CRTC and other government departments appropriate in the modern context and able to support competition in the telecommunications market?

7.2 Does the legislation strike the right balance between enabling government to set overall policy direction while maintaining regulatory independence in an efficient and effective way?

For both these questions, CECA believes that the legislation as it now exists works well and that there is no need to change it.

Summary

In summary, CECA observes that the answers to the seven questions posed by the Review Panel are interrelated as follows:

- 1. Funding or subsidies are required to ensure that there is a return on investment to provide services to rural, remote and indigenous communities;**
- 2. Passive infrastructure is critical to provide 5G and the explosion in demand for the need to access spectrum and the placement of small cell deployment at a fair and reasonable rate;**

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3. Safety, including public safety and security is essential as new and emerging technology is developed and massive amounts of data are moving around and used as the connected world explodes; and
4. Core networks and effective spectrum management with a timely and time sensitive license fee process are vital.

There is a pressing and critical role for new and revised legislative change in the *Telecommunications and Radiocommunications Acts*. CECA strongly urges that given the interrelated nature of the questions posed any legislative changes need to be coordinated between and among the *Acts*. CECA members have provided recommendations for such legislative change, clear policy directions required and suggested process to assist in achieving these.

Once again, we appreciate the opportunity to comment on the Legislative Review of the *Broadcasting, Radiocommunication and Telecommunications Acts*. We trust that the substantive comments documented in this submission and accompanying recommendations provide good advice to the Broadcasting and Telecommunication Legislative Review Panel and Innovation, Science and Economic Development Canada, and further commit to assist and inform the deliberations and process as it proceeds.

Please do not hesitate to contact us at any time.

Yours sincerely,



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About the Canadian Electronics and Communications Association

The Canadian Electronics and Communications Association/Association canadienne de l'électronique et des communications (CECA/ACEC) is a not-for-profit industry association representing manufacturers of electronics and telecommunications equipment. CECA member companies develop, market, manufacture and deliver wireless products and services that make up a significant part of the digital economy.

As a single entity representing some of the Canadian Wireless's industry's key players, CECA speaking with one voice can advise Innovation, Science and Economic Development (ISED) directly and through the Radio Advisory Board of Canada (RABC).

CECA members include: Cisco Systems Inc, Ericsson Canada Inc, Fujitsu Network Communications Inc, Harris Canada Systems Inc, Lectrosionics Canada, Lenbrook Canada Solutions, Motorola Solutions Canada Inc, Patriot One Technologies, SureCall and Nokia.