June 25, 2012

Executive Summary

The Eastern Ontario Regional Network is a private public partnership that has been funded to deploy a Gigabit Ethernet network that will support 10 Mbps (download speed) to the home for the 50,000 square kilometers of Eastern Ontario. This endeavor is focused on creating a viable 21st Century network for predominately rural areas (approximately 1 Million citizens) to ensure that economic development and sustainability can be achieved across the region. This government-based partnership is also focused on establishing the network for use in delivering all levels of government services. This project has funding from Federal, Provincial, Municipal governments and 5 private sector partners.

Currently three out of four access network partners are fixed wireless providers offering services to large areas, mostly where fixed cable based services are not present. These partners currently use a variety of spectrum to deliver these services including, but not limited to, 900 Mhz, 2.4 Ghz, 3.5 Ghz and 3.65 Ghz. In many instances a single provider uses multiple frequencies to ensure both reach and capacity to meet the demand from users. As the Internet and network connectivity become a necessary requirement of business, education and health and other activities, more bandwidth for services is essential.

EORN was developed specifically with a mandate to bring reliable and affordable high speed Internet services to rural users at a reasonably affordable rate. In addition to that EORN recognized the following:

- Smaller ISPs (typically fixed wireless) need to have equal opportunity to service users as larger nationwide ISPs/carriers
- Rural residents outside of concentrated towns (dense households) rely predominately on wireless ISPs, typically fixed wireless
- Many areas of our large region could not receive consistent reliable mobility services
• Spectrum is key in delivering services and enabling higher speed services over time

• Rural broadband needs long term oversight and monitoring to ensure growth in service speeds and offers

EORN has a governance model between government and the private sector for a 14-year period. For that time period the backbone and access providers must maintain a commitment to offering 10 Mbps to the home/business as well as providing network utilization statistics and information. These partners are also responsible for ensuring that the networks can meet the need to scale both in number of customers and speeds if necessary. *In order for growth to occur more spectrum is required* to ensure that rural citizens have access to viable and critical speeds for current and future services. Fixed wireless ISPs require access to spectrum as well as mobility providers.

EORN notes that in paragraph 4, Section 2 of the Consultation document Industry Canada states they are “guided” by the following objectives in Section 7 of the Telecommunications Act:

*Objectives*

7. *It is hereby affirmed that telecommunications performs an essential role in the maintenance of Canada's identity and sovereignty and that the Canadian telecommunications policy has as its objectives*

(a) to facilitate the orderly development throughout Canada of a telecommunications system that serves to safeguard, enrich and strengthen the social and economic fabric of Canada and its regions;

(b) to render reliable and affordable telecommunications services of high quality accessible to Canadians in both urban and rural areas in all regions of Canada;

(c) to enhance the efficiency and competitiveness, at the national and international levels, of Canadian telecommunications;

(d) to promote the ownership and control of Canadian carriers by Canadians;

(e) to promote the use of Canadian transmission facilities for telecommunications within Canada and between Canada and points outside Canada;

(f) to foster increased reliance on market forces for the provision of telecommunications services and to ensure that regulation, where required, is efficient and effective;

(g) to stimulate research and development in Canada in the field of telecommunications and to encourage innovation in the provision of telecommunications services;

(h) to respond to the economic and social requirements of users of telecommunications services; and

(i) to contribute to the protection of the privacy of persons
EORN believes these objectives to be essential in helping all Canadians, but specifically rural areas maintain access to critical network connectivity. As there is no viable business case for infrastructure in rural areas these objectives assist in ensuring availability of services. As stated, services need to be reliable and affordable and to respond to both economic and social requirements. While many parts of Canada are meeting the needs of users, many rural areas are still far behind their urban counterparts specifically in price/speed comparisons. For instance, an urban offer of 15Mbps at $50/month is effectively $3.33/Mb to the user. A service of 1.5 Mbps for $50/month is effectively $33.33/Mb (this does not include variances based on usage caps). This is a factor of 10 for a key criterion of services and the difference has an impact on economic development in rural areas.

It is an observation that the focus of the policy is to enable mobility providers’ access to the spectrum. The wording of the policy indicates that mobility providers require 700 Mhz to provide more rural mobile services. While EORN agrees this is a requirement for users and services, mobile services should not be considered a replacement for fixed network services. Fixed services are designed around parameters that reflect the users expectations regarding services parameters. Mobility services are designed around short connection times and for a set of users that may vary over a day as well as from day to day. This design is not conducive to allowing the users who want to use it daily for routine business or personal use to have consistent connection speed or operations.

EORN encourages Industry Canada to ensure that spectrum is available to all industry players and ISPs that may want to deliver services. EORN recognizes it is important for Industry Canada to set rules and policies which support the entire Country, however we ask that as Industry Canada moves forward they recognize the unique characteristics of rural users and ISPs to ensure that the most reliable and affordable services are being provided. For rural areas it may be best necessary to ensure that the rural context is fully understood.

**Response to Specific Questions**

Industry Canada is seeking comments on its proposal to issue spectrum licences in the 700 MHz band with a 20-year licence term.

Industry Canada is proposing to change the licence term from 10 years to 20 years. While it is understood that this can offer benefits in terms of longer build
out periods and ensuring consistency and sustainability for providers it is too long.

With existing terms (10 years) many rural areas remain inadequately serviced in the context of meeting the objectives outlined in the Telecommunications Act. In fact, many areas that were funded by the government of Ontario under their Rural Connections funding had to forgo the funds because the providers interested in serving those rural areas could not acquire access to desired spectrum. This spectrum was not desired only for its propagation characteristics but also as a component of ensuring the ability to scale and meet users speed requirements. Meanwhile the owners of the spectrum are not using it for deployment of services to these specific rural areas. Thus, rural citizens are disadvantaged compared to their urban counterparts in acquiring timely access to current service levels.

The concern is that by extending the licencing period is that the purchaser will not use the spectrum (specifically in rural areas) in a timely fashion to service customers but will hold the spectrum for “future use”. This strategy while balanced for the provider does not help rural citizens and businesses achieve satisfactory service levels and pricing. Rural areas are currently receiving services in the 1.5 – 3 Mbps (download speed). In many areas the price of those services is comparable to urban services of 5 Mbps to 15 Mbps. This sets rural citizens and businesses at a price disadvantage that can impede economic development in rural areas. EORN has had contact with many citizens who indicate that the usage caps and general price/speed of mobile data solutions is not adequate for their businesses.

Concern also arises in relation to a longer licence period due to the penetration and coverage of current mobile solutions in rural areas with current licences. While some areas acquire adequate speed services it is mostly confined to areas around more urban (even small urban) areas. As service areas become less dense (in terms of households) the engineering of the networks is not established to provide sustained speeds to all users as the network is not defined for static users. Also, depending on terrain and foliage conditions services may be reasonable in one direction but limited in reach and coverage in other directions from the same tower (EORN has received comment from citizens who were shown on map as covered but could not acquire connection).

These issues which are experienced daily by rural residents do not seem to reflect the goals of reliable and affordable services or supporting social and economic requirements of specifically rural Canada.

It should also be acknowledged that for future growth, more spectrum is required by all providers to offer higher data rates (speeds) to users. In order to ensure
that rural areas are being serviced properly, a longer licence period could impact the ability of rural users to receive higher rate services. The example of this is the current state. In many areas of rural Canada, funding programs have targeted a service speed objective as 1.5 Mbps (download speed) as adequate for rural users. This was common in programs operating in the timeframe of 2010, at this point 1.5 Mbps had been an urban offer for 10 years in many areas of the Country. Indeed, as of 2010 and currently 2012, many urban areas have speeds commonly available of 12-15 Mbps. For ISPs operating in rural areas there will be a need to have more spectrum at their disposal to grow service speeds to ensure rural areas can have access to base government services and global economic activities.

While options exist through satellite service the price difference and overall network performance are not comparable. In areas where terrestrial solutions can be economical, then those offer superior services at more affordable rates. For example, urban areas can acquire 5-25 Mbps offers for approximately $50 per month, satellite services of 3 Mbps are more than $65. This creates a large price difference in areas where economic development and business retention is key.

**Recommendation**

*That Industry Canada maintains a licence period of 10 years as a maximum for renewal. Renewing licence should not be limited to mobility providers. If spectrum is unused in rural jurisdictions then there should be opportunity for fixed wireless providers to access the licence in the rural areas where they can offer services to citizens.*

*Alternatively, IC could effectively split the licence area so that the mobility provider could maintain it’s urban area licence and the fixed providers could access the rural sections for use.*

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*Industry Canada is seeking comments on the application of the proposed wording of the licence condition related to rural deployment requirements. Specifically, comments are sought on the assessment of “access to two or more paired blocks of spectrum” for the purposes of this condition of licence.*

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Concern with this condition arises with the fact that only a few or in some areas perhaps no provider will have the paired blocks to fulfill the rural deployment requirements. While that may seem unlikely, it is still a concern as it is the main requirement for ensuring rural deployment.

Combined with the “paired” blocks rule come the remaining rules related to footprint allocation over time. The concern here lies in the fact that the deployment is only subject “based on existing High Speed Access Network footprint”. While this footprint appears holistic many areas report weak to poor connectivity (this is even demonstrated by dropped calls or inability to complete connection along the 401 in spots). Having commitments of 5-7 years to reach only a portion of the current HSPA footprint coverage means leaving many rural citizens without access to this new technology (which as indicated has “excellent propagation characteristics and is considered to be extremely important in the deployment of next generation mobile broadband services in rural areas”) until potentially 2018 or 2020. This leaves a large opportunity for the gap between urban and rural speed/price ratio. It is expected that this gap will continue to exist and in some respects grow as urban centers have more competition, offering more speeds and different prices. Urban users have the option to choose between fixed services and mobile (in many cases they select mobile data as an auxiliary or secondary service to fixed) but mobility services are considered adequate as the primary or the only service for rural users. One of the problems this creates is the price disparity as the usage caps and speeds do not offer the same as fixed urban offers.

The other concern is that winners of the paired blocks may be players with very small HSPA footprints and therefore with only a 97% obligation rule, they will not even be addressing large rural areas.

What will the penalty be for not reaching the rural requirements? With the licence renewal even at 10 years (not the 20 being proposed) will there be a requirement to wait until the renewal to assess the rural deployment? How will it be assessed – based on towers or based on geographic or household counts? How can we ensure that the actual households can acquire services (often dense tree coverage or low areas cannot maintain sufficient connection rates)? In fact, many
areas needed antennas to acquire television signals, how is it that external antennas above trees may not be required to ensure data network connectivity?

**Recommendation**

That IC implement rules around the concept of “use it or lose it” related to rural areas and deployment. These rules would apply prior to renewal if rural obligations were not met. Appropriate “penalties” could include segregating the spectrum allocation and enabling fixed wireless ISPs access to utilize that spectrum for delivery in rural areas.

That IC enables a mechanism for citizen feedback, especially in rural areas, to comment on access to network and pricing. This will provide IC with direct feedback that will enable them in keeping with the Telecommunications Act objectives of reliability, affordability, social and economic development and benefit. The mechanism could be a web-based tool or email address that the network operators (those with the rural obligations) would have to post in a clear place for the citizen input. The input could then go to both the carrier and IC directly so that both organizations can see progress and challenges.

That IC considers different timeline allocations related to the 2.5 Ghz auction relative to rural deployment. While 5-7 years favors capital cycles for providers who are deploying in both urban and rural footprints, it favors urban over rural for investment purposes. Many fixed wireless ISPs only focus on areas where fixed cable (copper, coaxial or fibre) based services are not available due to economic barriers. These providers will have difficulty in acquiring the paired blocks in the 700 Mhz due to lack of funds to compete in the auction and the reality that few operate in markets as big as an entire province (Tier 2) and would not try to purchase the spectrum.

While the 2.5 Ghz will use Tier 3 licencing, those blocks are still large encompassing many rural areas along with urban (consider Durham region in Toronto or the area surrounding Calgary). If population coverage is the base target, then the rural areas are often left without adequate services (often requiring additional towers and equipment) at the expense of the urban areas being served. (Note Durham Region could not use the allocated Rural Connections funding from Ontario as the proponent who was able to deliver infrastructure required access to spectrum that they could not acquire from the holder). IC should consider penalties and specific terms in the framework of “use it or lose it” relative to rural areas and consider the concept of splits in spectrum allocations to ensure sufficient rural opportunities. These rules should be considered to have terms less then the renewal data so as not to have rural citizens waiting longer for services.
More information on Eastern Ontario Regional Network can be found at
www.eorn.ca.

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