February 28, 2011

Manager, Mobile Technology and Services,
DGEPS, Industry Canada,
300 Slater Street, Ottawa,
Ontario K1A 0C8.

> **Subject**: Comments to Notice No. SMSE-018-10 – *Consultation on a Policy and Technical Framework for the 700 MHz Band and Aspects Related to Commercial Mobile Spectrum (December 4, 2010)*

Dear Sir,

1   Executive Summary

The British Columbia Broadband Association ("BCBA") is a consortium of ISP's in BC; most of these ISP's provide service in rural areas that have no broadband service provided by incumbents. These ISP's focus on expanding into entirely un-serviced markets and on bringing service levels in underserved markets to urban levels. The BCBA response will reflect our interest in BC's rural and remote markets.

2   Most of the BCBA members provide services using wireless technology. Wireless technology has advanced rapidly in the past decade, and today offers carrier-grade service levels to our customers. The low cost of deployment of wireless infrastructure permits BCBA members to build infrastructure in our sparsely populated service areas. The ability to access licensed spectrum is instrumental in the ability of a provider to

offer urban-grade service levels to these rural subscribers. As a group, the BCBA members operate a vast network of broadcast sites throughout BC, and are uniquely positioned to provide improved and expanded services to the remaining unconnected communities.

3   In Canada's previous spectrum auctions, winners have focused their investments heavily in Canada's urban and densely populated areas, leaving significant spectrum holdings underutilized in rural areas. As Industry Canada has noted, the 700 MHz band is particularly well-suited to rural systems due to the propagation characteristics of lower frequencies. The BCBA encourages Industry Canada to enable rural service providers to deploy advanced networks in these rural areas, through set-aside mechanisms in this auction.

4   Of Canada's 172 Tier-4 service areas, 7 of these areas hold 50% of Canada's population. Cellular mobile deployments have been focused in the 7 most highly populated service areas, and competition in these service areas is substantial (they are: Toronto-4077, Montreal-4051, Vancouver-4152, Ottawa-4055, Calgary-4136, Edmonton-4141, and Quebec-4030). There is significantly less coverage and competition in the least-populated 165 service areas.

5   **Proposal**

The BCBA proposes that a set-aside be designated for organizations that satisfy the following criteria:

1. Companies that are not bidding on spectrum in the seven most populous service areas;

2. Companies with less than $10m/year revenue; and

3. Companies that have a history of operating competitive fixed wireless broadband service for at least three years.

6   We propose that bidders for this set-aside spectrum be pre-qualified, and that the pre-qualification results be announced at least 90 days before the auction. This period would permit bidders to obtain the financing required to participate in the auction. A clear process would encourage smaller, rural companies to participate in the spectrum auction. Further, we suggest that the pre-qualification and the auction be held outside of the summer months, as the resources of smaller companies are strained during the construction season.

7   Such a set-aside will permit rural-focused companies to access spectrum in these

     regions. This will accelerate the deployment of these mobile wireless technologies in

     unserviced and underserviced areas.

8   In order to advance deployment of services into rural and remote areas, we propose

     that Industry Canada mandate that incumbents forge roaming agreements with set-

     aside winners, at the request of these Cowinners that allow incumbents' customers to

     roam onto the new rural networks. The set-aside spectrum winners would primarily

     service fixed and nomadic customers using LTE or WiMAX systems; two-way roaming

     would not confer a significant advantage. Mandated one-way roaming agreements

     would permit rural operators to raise adequate funding to purchase valuable mobile

     spectrum.

9   The BCBA believes that the proposal outlined above would encourage significant and

     accelerated investment into the rural and remote areas of Canada, leveraging existing

     networks and assets, without adversely impacting the levels of investment and

     competition in Canada's urban centres. This investment will be directed at bringing

     mobile broadband technologies to rural communities that are currently unserviced and

     underserviced.

10 **Comments to Notice No. SMSE-018-10**

4-1. What is the general need for additional commercial mobile spectrum at this time and what do you anticipate the future needs to be?

11 **Comment:** In general, we observe that the commercial mobile spectrum held by existing mobile carriers is underutilized in rural and remote areas. By contrast, BCBA members are heavily utilizing spectrum in the unlicenced (2.4 GHz and 5.8 GHz) and licensed (3.5 GHz and 3.65 GHz frequency bands) in order to provide basic broadband connectivity in rural areas. Access to commercial spectrum is necessary in order for rural providers to offer services that meet the rising bandwidth demands of our customers in rural and remote areas.

12 **5-1.** Based on the criteria listed above, which of the four band plan options should be adopted in Canada? Why is this option preferred over the other options? If Option 3 (APT band plan) is selected, what should the block sizes be?

13 **Comment:** BCBA service providers operate in remote and rural areas where interference with DTV stations and compatibility with US bands are not a significant

concern. We note that equipment that is compatible with US standards is often more

widely available, and at better prices, than equipment that must be developed solely for

the Canadian market. We encourage Industry Canada to choose a band plan that would

ensure the best possible choices in equipment vendors.

14   **5-3.** Do public safety agencies need spectrum for broadband applications? If so:

    a.   How much and for which type of applications?

    b.   What are the anticipated deployment plans and the possible constraints, if any,

       in implementing these plans?

    c.   Is there suitable alternate spectrum to the 700 MHz to meet these broadband

       requirements?

15   **Comment:** In the rural areas of BC, we believe that 10 MHz is sufficient to allow public

safety agencies spectrum for deploying broadband services. We note that the 4.9 GHz

band, made available for this purpose, has had extremely limited deployment in our

trading areas. This is partly due to category 2 and category 3 entities' lower priority in

this band (CPC-2-0-19), and partly due to cost of deployment. Due to the prohibitive

cost of constructing private networks in rural and remote areas, we expect that public

safety entities will work with service providers in order to achieve extensive and reliable

coverage.

16 **5-4.** Comments are sought on the need for public safety broadband radio systems to be

interoperable:

   a. between various Canadian public safety agencies;

   b. between Canadian and U.S. public safety agencies.

17 **Comment:** In our members' serving areas, obtaining adequate coverage is of primary

importance. Compatibility is a secondary concern.

18 **5-6.** Notwithstanding your responses to questions 5-3 to 5-5, the Department seeks

comments on whether public safety broadband needs can be met by using commercial

systems with priority access rights for public safety, at commercial rates.

Your views and comments are invited on priority access rights, including pre-emption,

and on the feasibility of such a system.

What public safety technical and operational requirements cannot be met by

commercial systems, from either a public safety or commercial operator point of view?

What specific rules, if any, should be mandated by the Department to make such a

system viable?

19 **Comment:** The BCBA members believe that public safety broadband needs in rural

areas can indeed be met by using commercial systems with priority access rights for

public safety, at commercial rates.

20 Using standards such as WiMAX and LTE, priority access and pre-emption rights are easy

to implement in commercial systems. Such rights would be highly feasible to

implement.

Public safety technical and operational requirements would be easily met and exceeded

by commercial systems using WiMAX, LTE or similar standards. These standards ensure

reliable prioritized communications and a high level of security for these

communications.

21 We believe that no specific mandates are required by the Department in order to make

such a system viable.

22 **5-7.** Comments are sought on the need for regional (local, provincial, etc.) dedicated

broadband networks to provide access to all public safety agencies, and the institutional

feasibility of implementing such a system.

23 **Comment:** In rural and remote areas, the cost of deploying an entirely private

broadband network is prohibitive to public safety agencies. These agencies would be

better served by access to commercial networks through rural operators.

24 **5-8.** Is there a need for a dedicated national interoperable broadband network to

provide access to all public safety agencies? The Department seeks comments on the

institutional feasibility of implementing such a system.

25 **Comment:** Much as mobile service providers focus their deployment efforts on urban

areas, we believe that a national interoperable broadband network would risk leaving

rural areas behind until the very late phases of deployment. Remote and rural public

safety agencies in the interior of BC would be better served through partnerships with

local rural network operators in obtaining access to broadband services in their fields of

operation.

26 **5-10.** If commercial operators are mandated to support public safety services, what tier

size should be applied in order to ensure adequate public safety coverage?

27 **Comment:** We believe that tier-4 is appropriate for mandating public safety coverage. Larger service areas will risk leaving significant communities un-serviced. In order to achieve more granular coverage, we believe that service providers can enter into agreements with public-safety entities.

28 **5-12.** The Department seeks comments on whether the auction of 700 MHz commercial spectrum should be based on uniform tier sizes across all spectrum blocks, or a mixture of tier sizes.

29 **Comment:** The BCBA members believe that smaller service areas are preferable in rural areas. Smaller tier sizes permit smaller players to enter the market and service very small communities, because of the lower price associated with a smaller geographic area. Larger tier sizes encourage a service provider to focus investment on the largest community in the area, slowing the deployment of services outside of larger centres. Offering smaller tier sizes in rural service areas (those areas outside the 7 most heavily populated Tier-4 service areas in Canada) may require a mixture of tier sizes in the spectrum auction.

30 **5-13.** Based on your answer above, what tier size(s) should be adopted?

31 **Comment:** In order to encourage investment in small rural communities that are

currently un-serviced or under-serviced, service areas smaller than tier-4 are required.

As service areas smaller than tier-4 are unwieldy, spectrum winners should be

permitted to engage in subordinate licensing agreements with other operators who

wish to deploy in within the service areas.

32 **6-2.** The Department seeks comments on the spectrum utilization policy.

33 **Comment:** As Industry Canada has noted, the propagation characteristics of the 700

MHz frequency band are well-suited to providing coverage in rural areas. In order to

leverage this band to bridge the digital divide in rural Canada, we believe that fixed

point-to-multipoint and nomadic uses should be permitted in the 165 least populated

tier-4 service areas. This will ensure that rural service providers can access this

spectrum to quickly establish viable business plans to deploy carrier-grade services to

rural unserviced areas. Industry Canada should not prohibit or limit the use of fixed

services in this band.

34 **7-1.** The Department seeks comments on the current state of competition and its

anticipated evolution, including the impact on consumers in the Canadian wireless services market:

a. in general;

b. in terms of its contributions and interaction to the broader Canadian telecommunications service market;

c. in comparison with the wireless markets of other jurisdictions.

35 **Comment:** Throughout most of the operating area of BCBA members, a BCBA member is the only provider of terrestrial broadband connectivity services. BCBA members' target areas for expansion are those that are considered unserviced by Industry Canada. These operating areas, with sparse populations and difficult terrain, present challenging business cases. The combination of offering fixed or nomadic services in these areas with the ability to accept roaming customers from incumbent carriers would encourage investment by rural service providers into these unserviced and underserviced areas.

36 The BCBA proposes that the set-aside (described in 7-6 below) be large enough to permit two or more spectrum winners, so that as services evolve in rural areas, competition can arise.

37 **7-2.** Provide views, and any supporting evidence, on the impacts of government

measures adopted in the AWS auctions, including the impacts on consumers and on the

state of competition. In particular, what has been the impact, if any, of such measures

on industry concentration, barriers to entry or expansion of services, and the availability

of new or improved service offerings and pricing plans?

38 **Comment:** The AWS auctions had, in our experience, no measurable impact on

competition or service levels in our rural trading areas. In urban areas, we believe that

the mandated access to roaming agreements in the AWS auction greatly supported the

new entrants, and we believe that a similar framework (consisting of a set-aside and

mandated one-way roaming as proposed by the BCBA) in the 700 MHz auction would

support rural service providers.

39 **7-3.** In light of the current conditions in the Canadian wireless service market(s), is there

a need for specific measures in the 700 MHz and/or 2500 MHz auction to increase or

sustain competition?

40 **Comment:** Throughout much of rural Canada, broadband service is either unavailable or

available only at high cost through satellite providers. Rural ISP's with terrestrial point-

to-multipoint systems deliver affordable and reliable services to areas with limited broadband options. We encourage Industry Canada to designate a set-aside as described in 7-6 for these rural operators, to encourage the expansion of service offerings in underserviced and unserviced areas. The set-aside should allow for two or more spectrum winners in these areas.

41   Further, the BCBA proposes (in 7-7 below) that one-way roaming with incumbent operators be mandated. It is not feasible for small companies to consider developing a complete mobile communication capability given their small markets and limited access to capital. By encouraging these providers to construct systems that would allow subscribers of the larger Canadian mobile operators to utilize their coverage area, the mandated roaming mechanism will encourage investment into rural areas.

42   **7-5.** If the Department determines that there is a need for measures to promote competition, which of the above mechanisms would be most appropriate and why should this mechanism be considered over the other? Comments should also indicate if further restrictions should apply so that policy objectives are met, for example, over a given time period?

43   **Comment:** The BCBA proposes that a set-aside mechanism be used. We propose a set-aside for rural operators, as described in 7-6(b) that will focus deployment efforts on Canada's unserved rural populations in the short term. The BCBA also proposes that a mechanism of mandatory one-way roaming, as described in 7-7, would further accelerate the deployment of new rural networks.

44   **7-6. (a)** If the Department were to implement spectrum aggregation limits (caps):

   a.   Should the cap apply to the 700 MHz band only or be broader?

   b.   What should the size of the cap be?

   c.   Should bidders and their affiliates or associates share the cap?

   d.   How long should the cap remain in effect?

45   **Comment:** Any spectrum cap should be applied independently to each frequency band auctioned by Industry Canada. The cap in rural areas should be no less than 20 MHz, in order to permit rural providers to use expanded channel widths (10 MHz) and multiple channels to provide high-throughput services to customers. The cap should be extended to bidders and their affiliates and associates, and should remain in effect for five years.

46 **(b)** If the Department were to implement a set-aside in the 700 MHz auction:

    a. Who should be entitled to bid in the set-aside block(s) and should the entitled bidders be restricted to bidding on the set-aside only?

    b. How much spectrum should be set-aside and which block(s) should be set-aside?

    c. If the set-aside were to include multiple blocks of spectrum, should they be contiguous?

    d. What restrictions should be put in place to ensure that policy objectives are met (for example, should trading of the set-aside spectrum be restricted for a given time period)?

47 **Comment:** The BCBA proposes a set-aside in the 165 least-populated Tier-4 service areas for bidders who:

    a. are not bidding on spectrum in the seven most populous service areas;

    b. with less than $10m/year revenue; and

    c. have a history of operating competitive fixed wireless broadband service for at least three years. – we might discuss with the group it might be 5 years

48 Given the low level of spectrum utilization in these 165 service areas, we suggest that at least 50% of the available spectrum be set aside for operators that fill these criteria.

This quantity of spectrum will permit the eventual development of competition as these markets evolve to support multiple service providers. The set-aside spectrum blocks should be contiguous. Winners of set-aside spectrum should be permitted to enter into subordinate license agreements with other carriers in order to encourage deployment in rural and remote communities. We believe that further restrictions on this set-aside spectrum will be unnecessary in ensuring that rural areas benefit from expanded service offerings resulting from the spectrum auction.

49   We propose that bidders for this set-aside spectrum be pre-qualified, and that the pre-qualification results be announced at least 90 days before the auction. This period would permit bidders to obtain the financing required to participate in the auction. A clear process would encourage smaller, rural companies to participate in the spectrum auction. Further, we suggest that the pre-qualification and the auction be held outside of the summer months, as the resources of smaller companies are strained during the construction season.

50   **7-7.** Are there other mechanisms that should be considered and, if so, how should these be applied?

51 **Comment:** In urban areas, we believe that the mandated access to roaming agreements in the AWS auction greatly supported the new entrants, and we believe that a similar framework would support rural service providers. In order to advance deployment of services into rural and remote areas, we propose that Industry Canada mandate that incumbents forge roaming agreements with set-aside winners, at the winner's request, that allow incumbents' customers to roam onto the new rural networks. The set-aside spectrum winners would primarily offer service to fixed and nomadic customers using LTE or WiMAX systems; two-way roaming would not confer a significant advantage. Mandated one-way roaming agreements would permit rural operators to raise adequate funding to purchase valuable mobile spectrum.

52 **8-1.** In the above context, the Department seeks comments on challenges and specific problems affecting the deployment of broadband mobile services to low-density rural and remote areas.

53 **Comment:** Achieving Return on Investment (ROI) in broadband infrastructure becomes increasingly challenging as the population density decreases and as customers are situated further from population centres. Various government programs, for example the Connecting Communities Agreement between the Network BC and TELUS, have

improved access to bandwidth in remote areas. Wireless technologies are well-suited to delivering broadband services in rural areas, where the ability to realize returns in sparsely populated areas is limited only by the ability of a broadcast point to reach customers. With wireless infrastructure, this ability is determined by terrain, and by the propagation characteristics of the frequency band in use.

54   In order to commit to an investment in broadband wireless infrastructure, an operator must be confident that the infrastructure will be future-proof, and ownership of the spectrum is an important part of that confidence. With the notable exception of the 2004 spectrum auction of the 3.5 GHz band, in which certain blocks were available at prices attainable to rural operators, licensed spectrum has been historically priced out of the reach of small service providers contending with the difficult ROI model of rural communities. Affordable access to 700 MHz spectrum for established rural service providers will spur deployment into unserviced areas, as these operators leverage existing infrastructure and gateway bandwidth to expand broadband and mobile services further into rural communities.

55   **8-2.** Is there a need for further regulatory measures or changes to existing regulatory rules (e.g. RP-19) to facilitate service deployments in rural and remote areas that

remain unserved and/or underserved?

56   **Comment:** The accessibility of licensed spectrum such as the 700 MHz blocks to rural

operators such as BCBA members will, we believe, stimulate investment into broadband

deployments in rural and remote unserviced areas. RP-19 has not, in our experience,

resulted in the transfer of any licensed spectrum to rural operators. The expected time

and expense involved in obtaining spectrum through this policy is a deterrent to small

companies interested in obtaining underutilized spectrum from mobile carriers.

57   The accessibility of 700 MHz spectrum to rural operators will create viable business

cases for providing services to large numbers of currently unserviced Canadians. There

will remain areas in which no un-subsidized business case is viable.   Nonetheless,

adopting the proposals described in this response will significantly advance the goal of

bridging the digital divide at minimal cost; eliminating this divide entirely will require

funding intervention in the most extremely remote communities.

58   **8-3.** Should the Department decide that measures are necessary, comments are sought

on specific measures that could be adopted within the 700 MHz spectrum auction

process to ensure further deployment of advanced mobile services in rural and remote

areas (e.g. roll-out conditions, tier structure, etc.).

58   **Comment:** The BCBA members believe that adopting the proposals described in this response (rural set-aside and mandated one-way roaming) will allow market forces to operate in rural and remote areas, vastly improving the broadband connectivity to these Canadians and stimulating investment in these areas with no additional regulation. The BCBA points out, however, that providing advanced mobile services in un-served areas is less urgent than providing urban-grade broadband fixed services. We propose that there be no restriction on the type of services (mobile, fixed or nomadic) deployed using the rural set-aside spectrum.

60   The BCBA would like to thank Industry Canada for giving our group an opportunity to present our perspective on these issues.

Sincerely yours,

Bob Allen

Bob Allen
President
BC Broadband Association

248 Reid St. Quesnel, BC, V2J 2M2
P 250.992.1230 / F 250.992.3930
info@bcba.ca

BCBA Members are:

	Company Name	Contact Person	Email
1	a2b Fiber	Scott Jamieson	Scott@a2bfiber.com
2	ABC Communications	Bob Allen	Bob.Allen@abccomm.com
3	Advanced Interactive Canada Inc.	Karim Lakhani	kariml@advancedinteractive.com
4	Alliance Business Solutions Inc	Rick Fielden	rfielden@island.net
5	Antic Wireless	Andrew Lea	andrew@anticwireless.com
6	BC Net	Michael Hrybyk	Michael.Hrybyk@bc.net
7	BC Wireless Ltd	Peter Lunn	peter@lunn.ca
8	Blueberry Ventures	John Klassen	stikeen@gmail.com
9	Broadband Surfer Canada Inc.	Stephen Friend	sfriend@canadasurfs.com
10	China Creek Internet Services Ltd	Dan Pattison/Marion Millar	wireless@nethop.net
11	FONEX Data Systems Inc.	Ronald J. Smith	rsmith@fonex.com
12	Go4objectives Ltd	Roel Coert	rcoert@go4objectives.com
13	GwaiiTel	Paul Daniell	admin@gwaiitel.com
14	Highway 16 Internet/508533 BC Ltd	Alan Madill, Barrie Topper	admin@hwy16.com
15	ISpeed Communications	Dave Bradich	dave.bradich@ispeed.net
16	KP Performance Antennas	Ken Caird	kcaird@kppa.ca
17	Lytton Area Wireless Society	Dan Mundall	daniel@lyttontec.com
18	Max Internet Technologies (MaxIT)	Rick Montmuro	rick@maxit.net
19	MBSI Canada Ltd	Michael Schneider	mschneider@mbsicanada.com
20	Navigata Communications	Jim Chisholm	jim.chisholm@navigata.ca
21	Open Source Solutions	Bob Allen	Bob.Allen@abccomm.com
22	Peace Region Internet Society	Arvo Koppel	pris@pris.ca
23	Perfect World Innovations Inc.	Andrew Lane	andrew@perfectworld.ca
24	Qnet, Coquitlam Optical Network Corp.	Rick Adams	radams@qnetbc.net
25	Seaview Communications Ltd	Valerie Weston	vjweston@shaw.ca
26	Sinkut Wireless	Wayne Reed	wayne@sinkutwireless.ca
27	Tranzeo Wireless Technologies, Inc	Dieter Kloepper	d.kloepper@tranzeo.com
28	Trispec Communications Inc.	Gary Cote	gcote@trispec.com

*** End of Document ***