October 27, 2006

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Subject: Barrett Xplore Inc. (BXI) Comments with respect to the proposed Spectrum Utilization Policy, Technical and Licensing Requirements for Wireless Broadband Services (WBS) in the Band 3650-3700 MHz, *Canada Gazette* – Part 1, Notice No. DGTP-006-06 dated August, 2006

1. BXI is pleased to submit the attached comments concerning the proposed spectrum utilization policy, technical and licensing requirements identified in the above captioned consultation.

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

Yours truly,

John Maduri
CEO
Barrett Xplore Inc.

Encl. Attachment

Canada Gazette Notice No. DGTP-006-06
August, 2006

# Proposed Spectrum Utilization Policy, Technical and Licensing Requirements for Wireless Broadband Services (WBS) in the Band 3650-3700 MHz

Published in the *Canada Gazette*, Part 1
5 August, 2006

## Comments on proposed policy, technical and licensing requirements.

Barrett Xplore Inc.

October 27, 2006

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# 1. Introduction

Industry Canada released DGTP-006-06 in August 2006 to initiate a consultation process on proposals to establish the spectrum policy, technical and licensing provisions to accommodate Wireless Broadband Services (WBS) in the band 3650 – 3700 MHz.

Barrett Xplore Inc. (BXI) is pleased to participate and provide commentary on the Department's proposals and fully supports Industry Canada's goals of encouraging new entrants, especially in the rural markets where choice, competition, and broadband availability lag the situation in urban Canada.

BXI applauds Industry Canada's consideration of a differential approach for rural Canada as it develops its plan to award/license 3.650 to 3.700 GHz spectrum. Lower population density and fewer alternatives for high capacity and cost-effective IP backhaul/backbone are two obvious challenges to bringing broadband to rural Canada—these facts make both operating and capital costs considerably higher in providing service to the rural market. An auction process that has rural Canada included together with urban Canada puts additional cost pressure on the rural broadband financial model and thus has the potential to slow the deployment of broadband to this market.

## 2. Summary

Barrett Xplore Inc. (BXI) has chosen to comment on several aspects of the recommendations laid out in DGTP-006-06 that have particular reference to new competitive entry and the advancement of broadband service in rural Canada. Urban markets have numerous broadband facility options, including DSL, Cable modem, wireless broadband, and 3G cellular. Given the rural market's characteristic of lower population density, wireless broadband will play a much more important role in rural than urban Canada. Hence, a thoughtful and differentiated approach to awarding spectrum has great potential to encourage new and sustainable competitive entry as well as accelerating deployment of service over a much shorter period of time than generally anticipated.

The main topics that BXI is responding to are identified below along with a summary.

- **Applications in Canada:** BXI agrees with the Department's goal of supporting a full range of fixed and mobile applications including voice, video and data services. BXI also supports the Department's focus on ensuring the licensing process encourages new entrants and recognizes the importance of wireless technologies to rural Canada given lower population density in those markets.

- **Licensing Approach:** BXI supports the use of Spectrum Licenses as a means of licensing the 3650-3700 MHz band spectrum. Minimal administrative burden will be an important factor in accelerating successful use of the licenses and in the deployment of rural broadband service as well as the development of innovative new service offerings.

- **Service Areas:** BXI recommends that service areas be assigned for licensing based on household density as currently defined within Industry Canada's urban/rural density guidelines described in Radiocommunication Information Circular RIC-27. Historical perspective on many current licenses has shown that the mix of market types within a single license makes for a complex business case. The urban portion within the license garners the attention of the licensee at the expense of the rural and remote population. License values, in an auction environment, therefore get bid up, by large national and incumbent providers, based on their urban values, preventing alternative rural broadband providers from cost effectively acquiring spectrum for the rural portion of that license area.

- **Spectrum Structure and Licensing Options:** BXI recommends the following approach in structuring the award of licenses:
  - Service areas should be segmented into rural and urban licenses based on household density as defined in RIC-27.
  - The 50MHz of available spectrum should be segmented into two 25 MHz license blocks for each of the service areas to facilitate entry of more than one licensee.
  - Exclusive spectrum licensing should be made available for each geographic region.
  - At least one of the licenses in each service area should be set aside for a new entrant not affiliated with the large national wireless operators,
  - Licenses should be technology neutral and contention protocols should not be required. This way rural deployment will not be compromised from creation of a different standard relative to urban areas,
  - Licenses should be awarded for rural areas on a geographic basis that is broad enough to provide for economies of scale and scope to ensure long term viability. This could be on the basis Tier 2 or 3 (Provincial or Regional) service areas, rather than Tier 4.

- That the rural licenses be awarded based on a comparative selection process based on:
    1. Extent of provider's existing commitment to rural broadband markets including the number of communities served and homes passed; and,
    2. The provider's ability to demonstrate financial, operational, and management capacity and capability to execute extensive and timely deployment.

Our detailed comments are provided in the following sections.

## 3. Background

Barrett Xplore Inc. (BXI) is Canada's FIRST, NATIONAL RURAL broadband provider. Our vision is simple—more for rural Canada: more choice, competition, and availability of broadband access, applications, and accessories. The vision speaks to a change in the historical paradigm for telecom in rural Canada. Historically, with lower population density and consequently, higher capital and operating costs, rural Canadians have been challenged by higher costs and less availability of broadband telecom services enjoyed by urban Canadians. Further, rural Canada has historically been subject to first, a regulatory monopoly for telecom services, and then a de facto monopoly owing to the high barriers to entry in competing with Canada's telephone companies. The execution of our strategy is focused on achieving an urban quality broadband experience in our target market, rural Canada.

It is not an inconsequential consideration that BXI is headquartered in Woodstock, New Brunswick. Our location is consistent with and reflective of the Barrett family's legacy of serving this market; the best example is our pivotal involvement in StarChoice, over 1996 to 2004, in bringing satellite TV to over 700,000 Canadians. Today, our focus is in providing broadband to rural and remote areas of Canada using new, state-of-the-art fixed wireless and Ka-band satellite technology. BXI's commitment to "broadband everywhere" is fulfilled by applying a "best fit" approach to technology, based on the characteristics of the market being served. By using advanced Ka-band satellite services to address markets where fixed wireless and other terrestrial based service is uneconomical to deploy, BXI has developed and is implementing a sustainable and economically viable solution to the broadband needs of Canadians in areas that until recently had been unable to obtain this service.

By June of 2006, BXI will have invested $40 million of private capital in its broadband initiatives and the company has entered into supply contracts valued at $240 million to fulfill its business objective of becoming the leading supplier of broadband services to rural and remote areas of Canada. With quantum advances in the cost, capability, and reliability of fixed wireless and satellite broadband technology; with the evolution of innovative provincial Internet backbone models such as SuperNet and Network BC; and with the entry of BXI and other alternative rural broadband providers, 2006 will mark a critical juncture in the availability of rural broadband and the development of a competitive rural market.

As indicated above, BXI's business strategy has been to focus on extending the reach of affordable broadband service to Canadians that reside outside areas that terrestrial carriers can economically serve. BXI's fixed wireless services offer bandwidths from I to 8 mbps, depending on customers' requirements, at prices starting as low as $29.99 per month. BXI's Ka-band satellite service delivers high quality broadband services with speeds from 500 kbps to 2 mbps at reasonable prices, starting at $54.99 per month. These prices and bandwidth offerings compare favorably with prices available in other parts of Canada with higher population densities. BXI services its customers with a network of over 800 local community-based partners who sell, install and support its services.

Demand for BXI's services has been extremely robust. BXI is serving customers in all provinces and territories of Canada, including vast regions of the country that are hundreds of miles from any urban centre. **Importantly, BXI is providing its services in all of these areas without the benefit of a government subsidy.**

# 4. Detailed Comments

## *4.1 DGTP-006-06 Section 6 – Applications in Canada*

### 4.1.1 Excerpts from Section 6 of DGTP-006-06

*The Department wishes to ensure that there are minimal regulatory barriers in order to encourage new entrants and to stimulate the rapid expansion of wireless broadband applications in the band 3650-3700 MHz.*

*The Department proposes that new licensees be permitted to deploy a full range of fixed and mobile applications (i.e. point-to-multipoint or point-to-point).*

*The Department seeks comments on the types of wireless broadband applications which may be deployed in Canada in the near future*

### 4.1.2 Comments on Applications in Canada

BXI agrees that there should be minimal regulatory barriers in the use of band 3650 – 3700 MHz.

- Minimal regulatory barriers will encourage and enable alternative rural providers to explore, innovate, and deliver the full breadth of possible broadband applications. The spectrum should be open to the following point-to-point or point-to-multipoint applications/functionality:
    - Full Mobility
    - Voice/VoIP
    - Video/Video over IP
    - Data
    - Local Access as well as backhaul services
    - US alignment & interoperability

- Fewer barriers will likely translate into lower costs for both the regulator and for alternative rural broadband providers. The inherent cost

challenges, in rural Canada, of lower population density will make it all the more critical to fully leverage the potential of wireless technology.

- As per the department's guidelines, in order to encourage new entrants and to stimulate the rapid expansion of wireless broadband applications in the band 3650-3700 MHz., there should be few restrictions placed on the applications permitted within the spectrum. New entrant business models will require flexibility and innovation. Rural Canada has the potential to become the new proving ground for leading-edge wireless solutions, possibly leapfrogging urban markets in certain applications, driving new economic opportunity to rural Canada, and sustaining Canada's heritage of leadership in broadband and telecom.

## *4.2 DGTP-006-06 Section 7 – Licensing Approach*

### 4.2.1 Excerpt from Section 7 of DGTP-006-06

*Benefits of spectrum licensing include reduction of administrative burden as licensees are authorized by geographic area and frequency or frequency block, rather than authority for the installation and operation of an individual radio apparatus. Spectrum licensees are responsible for ensuring that their radio communication networks are properly planned and coordinated prior to operation, including approval of antennas and their supporting structures and other conditions of licence applicable to all licensees, which are outlined in Appendix* A.

*The Department is of the view that the issuance of spectrum licenses, as described above, would be the appropriate licensing mechanism for this service. Comments are invited on this proposal*

### 4.2.2 Comments on proposed Licensing Approach

BXI supports the use of Spectrum Licenses as a means of licensing the 3650-3700 MHz frequency block. BXI feels that this form of licensing will allow for the

quickest deployment and greatest flexibility for service providers. BXI is concerned that using a radio license model will require a significant amount of administration and thus constrain and slow license holders in their ability to quickly adopt new technologies and trial new services. Rural markets require a flexible licensing framework that fosters innovation and rapid deployment.

## *4.3 DGTP-006-06 Section 7.1 – Service Areas*

### 4.3.1 Excerpt from Section 7.1 of DGTP-006-06

*The Department is of the view that Wireless Broadband Services would be amenable to licensing on a regional/local basis and proposes that Tier 4 service areas be used for this band (see Appendix B).*

*Each eligible applicant would be granted access to the full block covering a Tier 4 service area. Individual site-licenses would not be required; however, licensees could be required to provide technical information to be entered into a database.*

> *Comments are sought on the proposal to use Tier 4 service areas for the licensing of the bands 3650-3700 MHz.*
>
> *The Department invites alternative proposals on service areas, including rationale, where a Tier 4 service area is not suitable.*

### 4.3.2 Comments on Service Areas

BXI expresses reservations and concerns about the Department's proposal to proceed with licensing based on Tier 4 service areas.

While BXI is currently using license exempt spectrum (predominantly in the 900 MHz and 2.4 GHz range) for its wireless deployments, there has been considerable effort expended in identifying other licensed spectrum options and in evaluating these for the purposes of rural broadband deployments —

specifically in the 700 MHz, 2.3 GHz, and 3.5 GHz bands. While licensed spectrum has been awarded through various processes in the 2.3, 2.5, 2.6 and 3.5 GHz blocks, deployment of broadband in rural service areas, on these spectrums, has been minimal to date. Some of the reasons for this are:

1) The geographic area covered by licenses often encompasses large territories that include varying population densities. An example of this is the Calgary Tier 4 service area – 4-136 which covers approximately 20,000 square km and covers high density urban and suburban areas as well as rural areas surrounding the city. This structure and definition of license areas needs to change. Alternative rural broadband providers cannot compete with the ILEC's and other large service providers in an auction process, where bid values would focus on the core urban portions of licenses. An alternative rural provider cannot afford to acquire an entire license area and then leave the urban and suburban portions of it unused. The result: an in-ability for alternative rural broadband providers like BXI to access licensed spectrum in order to serve rural communities—and, in turn, rural communities are then denied the opportunity for choice, competition, and availability of broadband.

2) BXI believes it important that there be made available licensed spectrum sufficient to meet the needs of national, regional/provincial alternative rural broadband providers. A constant theme in the discussion of rural broadband strategies is the need to offset the inherent cost disadvantages relating to low population densities and lack of cost-effective IP backbone/backhaul with other cost advantages. One critical cost advantage is economies of scale, which follows a more broadly based national or regional business model—economies of scale in purchasing network equipment, in negotiating favourable backbone and tower rental agreements, and in operations (network operations, customer care, and

billing). The ability to deploy and scale across the entire nation or specific provincial or regional markets will be severely handicapped by a Tier 4 level market-by-market approach. While the market-by-market approach may initially yield the benefit of local entrepreneurial engagement, over time, there will be incredible economic pressure for consolidation. Consolidation, in turn, results in incremental transaction costs and speculative profits which will not be helpful in advancing the speed and extent of rural broadband deployment.

3) The problem of urban-rural market segmentation can also be seen in the results of the 2.5 GHz MCS comparative selection process conducted in 2000 that awarded almost all of the Canadian licenses to Inukshuk Internet Inc. through a comparative licensing or "beauty contest" approach. Unfortunately the very large MCS license areas include both rural and urban markets. The lure of the large urban population and easier business case returns likely explains why the deployments, announced to date, focus on large urban areas. The first 20 areas to be served by Inukshuk Internet Inc. are the largest and densest urban markets across the country including Toronto, Montreal, Vancouver, etc. (see press release of March 31, 2006). It is apparent that the majority of the 2.5GHz remains idle in the rural and remote markets where it could be put to good use fulfilling Canada's objective for 100% national broadband coverage and availability.

BXI recommends that there be distinct separate licenses covering rural areas and recommends the following for Service Area licensing:

1. Divide licenses into urban and rural based on the Department's definitions as found in RIC-27 (or an updated approach to rural/urban segmentation).

This will ensure consistent population densities and definition of licenses between Urban vs. Rural/Remote.

Applying this approach, for example, to the Calgary license 4-136, would highlight the great extent to which this license is made up of mainly rural cells. A separation of the rural and urban cells into 2 new licenses would allow for a significant geographic area (Figure 1) to be licensed to an appropriate new entrant with a business plan targeted to this market.

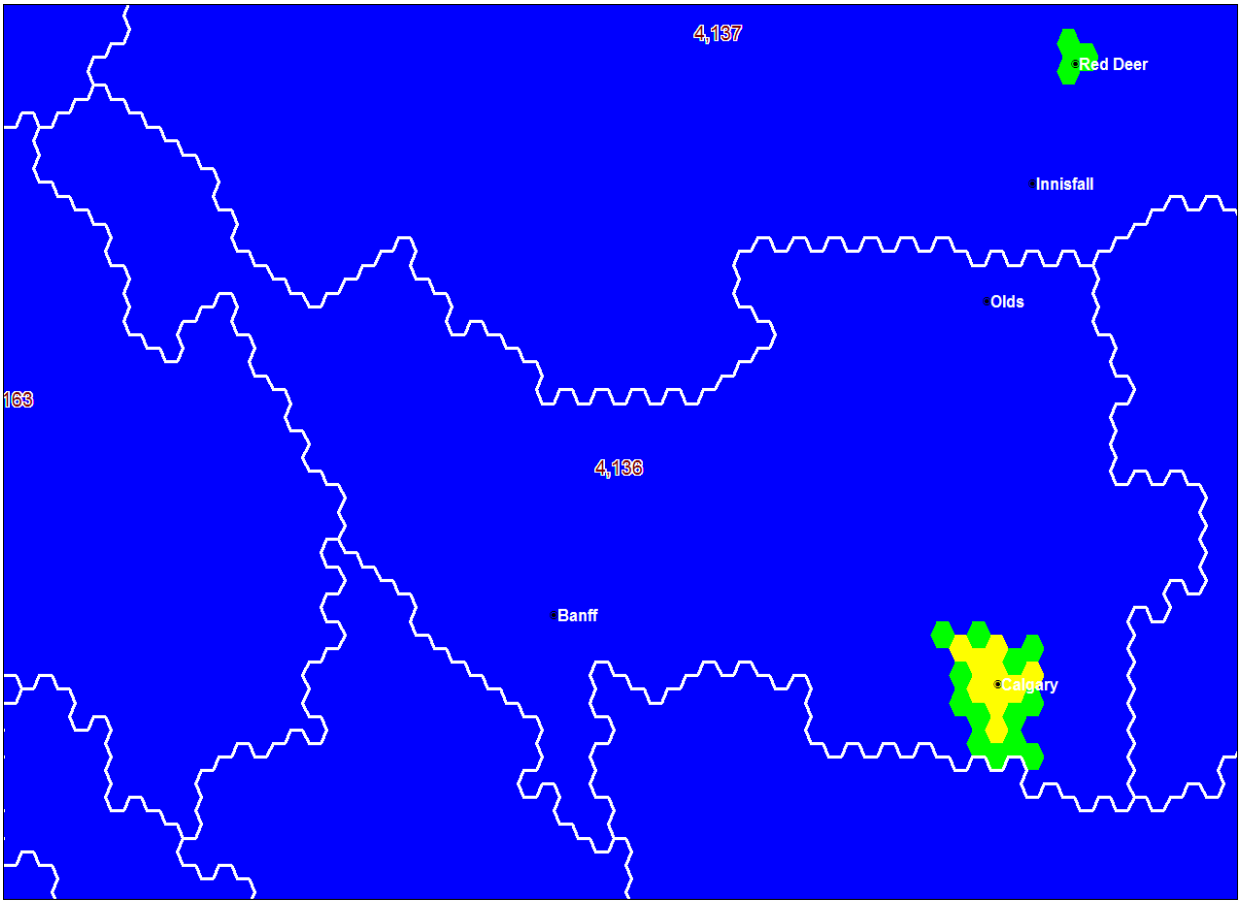


Figure 1 – Calgary Tier 4 License

2. Offer licenses at a provincial or regional level (Tier 2 or Tier 3) for each of the defined categories rural and urban categories in order to afford effective economies of scale in each service area.

3. Segment the 50 MHz spectrum block into two regional/provincial 25 MHz blocks. This structure would afford a number of regional/provincial providers the economies of scale needed to support the rural markets.

## *4.4 DGTP-006-06 Section 7.2 – Spectrum Structure and Licensing Options*

### 4.4.1 Excerpt from Section 7.2 of DGTP-006-06

*The use of a single 50 MHz spectrum block will allow for more bandwidth-intensive applications and potentially simpler implementation. The use of two 25 MHz spectrum blocks has the potential to simplify sharing between operators and could allow for different rules in different parts of this spectrum. The Department has outlined various licensing options below.*

### 4.4.2 Excerpt from Section 7.2.1 – Exclusive Spectrum Licence of DGTP-006-06

*Similar to the band 3475-3650 MHz, exclusive spectrum licenses would be made available for each geographic area. This approach minimizes the potential for interference between systems, but also limits the number of potential licensees.*

### 4.4.3 Excerpt from Section 7.2.2 – Non-exclusive Spectrum Licences of DGTP-006-06

*In this scenario, non-exclusive licenses would be issued to multiple licensees for the same spectrum in the same geographic area on an FCFS basis. It is proposed that all licensees would have equal access to the spectrum and no priority be given based on the date of licensing.*

### 4.4.4 Excerpt from Section 7.2.3 – Exclusive Urban and Non-exclusive Rural Spectrum Licences of DGTP-006-06

*Industry Canada recognizes that the potential for excessive congestion and interference is more likely in densely populated urban areas. In this scenario, the Department would issue non-exclusive spectrum licences in rural areas and exclusive spectrum licences in urban areas. The Department would most likely initiate a competitive licensing process for the exclusive spectrum in urban areas and an FCFS process for the non-exclusive rural spectrum. An urban/rural split could apply to all 50 MHz, or only to a single 25 MHz block of spectrum.*

*Comments are invited on the proposed options for exclusive and/or non-exclusive licensing and any other options not outlined in the table, with supporting rationale. Any option could be applied to all or part of the spectrum. In the case of urban/rural service areas, the Department seeks the rationale and criteria for defining urban and rural. It should be noted that the licensing process and requirement for contention-based protocols will be determined based on the option selected.*

### 4.4.5 Comments on Spectrum Structure and Licensing Options

While BXI believes that there are advantages to aligning Canadian spectrum structures with those proposed by the FCC in the US, the combined scalability of a national license and the flexibility to support multiple new entrants through a local license outweighs the advantages of this alignment. BXI believes that 25 MHz spectrum blocks will be sufficient to support the full range of broadband applications**.**

With respect to structuring exclusive or non-exclusive licenses, BXI recommends the use of exclusive spectrum licensing for both urban and rural markets as a means to ensure consistency in quality of service between urban and rural markets. While there may be some theoretical advantages to non-exclusive licenses, in terms of ease of deployment and cost/availability of equipment, these advantages, supported by BXI's own experience, are outweighed by other disadvantages—the impacts of non-exclusive licensing can be seen in:

- Behavior that is inappropriate in context of the public good:
    - "Squatter's rights" – aggressive operators deploy excessive wireless infrastructure with a view primarily to blocking the entry of other operators. The "first in" operator is under no obligation to extend service or make effective/efficient use of the spectrum, and may be looking to extract value for their first-to-market position by locking up spectrum/hoarding; and,
    - Lack of coordination of spectrum leads to interference with no consequences to those providers who do not work carefully to ensure coordination with other potential competitors.
- Interference issues:
    - As a result of this interference, there is the risk that rural customers would experience a lower grade of service than urban who benefit from a greater breadth of both wired and licensed wireless broadband options
    - Interference creates an issue for the operator as well as the customer: extra costs incurred in addressing customer queries about interference, manifested as intermittent speed and service issues. The costs of interference add to an already challenging rural business model.

While the Department has presented potential technical and administrative solutions to help mitigate this interference issue, there is concern that even the implementation of these solutions could ultimately relegate rural markets to second-class citizens.

- The implementation of *contention-based protocols* could increase the costs of equipment and thus the end-services to rural customers,

- The actual use of *contention-based protocols* by its nature will result in reduced performance and increased latency as devices re-transmit and re-establish connectivity when contention is encountered
- The requirement to enter station location information into a database to facilitate coordination will add administrative overhead and will slow deployments.

BXI also recommends that the urban and rural licenses be awarded differently. We are recommending that rural licenses be awarded based on a comparative selection process. The comparative selection process would be based on an assessment of each applicant's history of commitment and investment in rural broadband, as well as their capacity and capability to deploy a rural broadband expansion plan. In terms of licensing techniques, a comparative selection process would allow the Department to assess the viability of potential licensees' business plans. The process, however, should ensure that at least one license (e.g. one 25 MHz license covering the rural portions of Tier 2 or Tier 3 service areas) be reserved for a new entrant, or a competitor not affiliated with any of the large wireline or wireless operators.

BXI believes that the comparative selection process should be used to evaluate the applicant's demonstrated commitment to rural broadband, as reflected in:

1. Current implementation of services in the rural markets
2. Number of communities currently served
3. Current investments in the rural markets and on-going financial viability
4. Management and operational execution capabilities.

An alternative to comparative selection would be to conduct a least-cost subsidy auction process. This approach was recommended by Canada's Telecom Policy Review Panel in its report of March 2006 (at pages 8-16 to 8-17). Least cost subsidy auctions are a way to allocate licenses to the most efficient technological

solution. As discussed above with respect to a comparative selection process, an auction process should also ensure that at least one license (e.g. one 25 MHz license covering the rural portions of Tier 2 or Tier 3 service areas) be reserved for a new entrant, or a competitor not affiliated with any of the large wireline or wireless operators.

## *4.5 DGTP-006-06 Section 7.3 – Contention-based Protocols*

### 4.5.1 Excerpt from Section 7.3 of DGTP-006-06

*The Department believes that if non-exclusive licenses are issued, it will be necessary to employ mitigating measures to reduce interference between systems. Licensees may be required to enter station locations into a public database to provide contact information and facilitate coordination between the licensees. However, the use of such a database by itself is unlikely to provide sufficient protection to licensees.*

*Hence, it is proposed that non-exclusive licensees operating in the band 3650-3700 MHz be required to use radio equipment that makes use of a contention-based protocol in order to limit their potential to cause or be affected by interference.*

*Comments are invited on the proposed definition as well as the Department's proposal to require the use of contention-based protocols for non-exclusively licensed spectrum in the band 3650-3700 MHz. Alternative proposals are welcome and should include details as to how these proposals address the potential for interference between non-exclusive licensees. The Department invites comments on the requirement to enter station and contact information into a publicly accessible database.*

### 4.5.2 Comments on Contention-based Protocols

As previously stated, BXI is of the opinion that use of contention-based protocols and administrative coordination measures to reduce interference issues in non-exclusive license markets will result in a reduced level of service to the markets where this solution are applied. In addition, it will add overhead costs to both Industry Canada and the operator in term of policing and reporting. The

business case for services in the rural markets is challenging enough without the additional burden of on-going regulated spectrum reporting.

The Department should also keep in mind that the question of the suitability of contention-based protocols for the applications envisioned for the 3650 MHz band are not yet resolved in the FCC's process in the US. In the FCC Docket there are numerous competing views on the viability of contention-based protocols and concerns continue to be expressed over quality of service. [1] Some contend that contention-based protocols will not provide a suitable level of service when longer distances are required. For example:

> Where the transmitting device intends to transmit over a long distance, not only is there greater probability that multiple users also will be attempting to access the spectrum at that same time, but there also is reduced throughput because more users must remain silent for longer periods of time to avoid interference. Contention-based protocols work best in small areas.[2]

Others claim this is not an important issue since the primary application will be for backbone transmission, and therefore support the non-exclusive licensing approach using contention-based protocols. Some say they want non-exclusive but without the contention-based protocol since developing a new standard will take too long. And others suggest that the band should be simply divided into smaller licenses to facilitate use by multiple players.

Regardless of which answer has more technical validity, it would be imprudent for the Department to set in place a Canadian-only solution in advance of the FCC finalizing its rules. This would compromise the ability of Canadian licensees to implement services and potentially increase costs – particularly hampering

[1] See for example presentation by Motorola Inc, in FCC ET Docket No. 04-151, June 27, 2006

once again deployment in the very rural areas that Government policies are attempting to address.

As stated earlier, BXI feels that a simpler solution to provide an opportunity for more than one provider to implement service – technically and administratively – is to divide the band into two 25 MHz licenses.

## *4.6 DGTP-006-06 Section 8 – License Term*

### 4.6.1 Excerpt from Section 8 of DGTP-006-06

*The Department proposes that licenses for spectrum in the band 3650-3700 MHz be issued for a ten-year term with license fees payable by March 31st of each year.*

*Comments are invited on the proposed license term.*

### 4.6.2 Comments on License Term

Given the difficulty of providing services in the rural and remote areas BXI believes the proposed 10 year term should be extended to 15 or 20 years with the inclusion of a "use" policy where-by a license holder could potentially lose access to the spectrum should the Department determine via periodic reviews (e.g. every five years) that the spectrum is not being utilized.

## *4.7 DGTP-006-06 Section 8.1 – License Fees*

### 4.7.1 Excerpt from Section 8.1 of DGTP-006-06

*Therefore the Department proposes to use the same fee as that described in SP 4940 MHz, which is $0.0042 per 50 MHz per population subject to a minimum fee of $250. The minimum fee reflects an estimate of actual costs for processing and maintenance. Appendix B shows the proposed fee for each Tier 4 service area.*

[2] Petition for reconsideration of Motorola Inc., FCC ET Docket No. 04-151, June 10, 2005

*The Department requests comments on the proposed license fee* ***of $0.0042 per 50 MHz per population****.*

### 4.7.2 Comments on License Fee proposal for non-exclusive licensing

As previously stated, BXI does not support a non-exclusive licensing regime. That said, the recommendation of a performance or comparative selection based regime could require some form of licensing fee in order to ensure administrative costs are recovered and to also help ensure the spectrum is used effectively. The Department should keep in mind, however, that many remote areas of the country may not be economic to serve and therefore effectively not be able to support any fee at all. These areas typically are those that would attract program funding to support deployment from programs such as BRAND or the National Satellite Initiative. If the Department were to use a least cost subsidy auction to assign the rural 3650 MHz licenses, then a fee would be inappropriate..

## *4.8 DGTP-006-06 Section 8.3 – Spectrum Aggregation Limits*

### 4.8.1 Excerpt from Section 8.3 of DGTP-006-06

*During the auctions of the 2300 MHz and 3500 MHz spectrum, the Department established a spectrum aggregation limit to safeguard against anti-competitive behavior and increase the opportunity for Canadians to have an expanded choice of new and innovative wireless services through a number of service providers. In scenarios where exclusive spectrum is desired and a competitive process is adopted, the Department is considering whether or not it should impose any limit on in-band or out-of-band spectrum aggregation on licensees in the band 3650-3700 MHz.*

*The Department invites comments on whether it should impose in-band or out-of band spectrum aggregation limits on licensees in the event a competitive process is adopted, and the rationale for such limits.*

### 4.8.2 Comments on Spectrum Aggregation Limits

BXI supports the concept of applying safeguards against anti-competitive behaviour but do not believe that aggregation limits have been an effective vehicle to achieve this. Aggregation limits – in-band and out-of-band – used by the Department in the past for the fixed service have either phased out because they are ineffective and/or no longer needed:

- Aggregation limit for 2.3 and 3.5 GHz licenses – for auction purposes, with five licenses per market this was put in place to ensure multiple bidders were able to secure spectrum within a cap of 100 MHz. This is being phased out post-auction. The limit in any case was largely ineffective in promoting new entry since the bulk of the licenses awarded in the auction process went to the large national wireless operators.
- Even though the target market for 2.3 and 3.5 GHz based service is similar to that of the 2500-2690 MHz range licenses, the Department did not apply an out of band limit. Many of the licenses issued in the 2.3 and 3.5 GHz range are held by licensees in the 2500-2690 MHz range.
- Broadband spectrum cap – a limit of 1000 MHz was put on licensees in the 24, 28 and 38 GHz ranges. This was eliminated in 2006.

As previously stated BXI recommends the segmentation of the 50MHz block into two 25MHz blocks offered at a Provincial or regional (Tier 2 or 3) level and that these license areas be segmented into rural and urban licenses based on household density. This license segmentation combined with the stipulation that at least one of the licenses in each service area be set aside for a new entrant not affiliated with the large national wireless operators, should negate any impacts associated with anti-competitive purchasing behaviours and would be more effective than a spectrum aggregation limit.

## 5. Conclusion

The policies and licensing requirements for use the 3650 MHz – 3700 MHz developed through this consultation process have the potential to significantly accelerate the Departments goals for 100% broadband coverage of Canada. BXI believes the segmentation of licenses into rural and urban areas, along with the other recommendations included in this response, will be critical tools to helping achieve this goal

BXI appreciates having the opportunity of providing input to the Department with respect to the provisional recommendations set out in DGTP-006-06.