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## **WiMAX Forum Response to the Public Consultation of Industry Canada on Spectrum Policy in 4 940-4 990 MHz**

### **1 Introduction**

The WiMAX Forum welcomes the initiative taken by the Canadian Administration to propose spectrum utilization, technical and licensing requirements for broadband public safety in the band 4 940 – 4 990 MHz.<sup>1</sup> The WiMAX Forum believes that technology based on IEEE802.16 standards will meet requirements espoused by several Canadian public safety agencies for the delivery of high-speed wireless transfers of large files, images and video, as well as internet access. Therefore the WiMAX Forum would strongly consider an equipment certification profile that will increase the range of interoperable systems available to the public safety services with the resulting benefit of multi-sourced supply and economics.

### **2 Industry Canada questions and WiMAX Forum responses**

#### **2.1 Spectrum Utilization**

##### *2.1.1 Fixed and Mobile Use*

*What types of public safety applications are foreseen to be deployed in Canada in the near future?*

Public safety applications to be deployed in Canada will provide first responders with the capabilities of real-time streaming video applications and high speed data transfer. The video applications provide improved response at critical public safety incidents such as criminal surveillance, major fires, prison riots and natural disasters. High speed data transfer enables fire and emergency medical services personnel to quickly download building plans and other technical information which will increase the effectiveness of their responses. With the use of high speed data transfer police will be able to rapidly download large data and image files containing images/fingerprints of wanted or missing persons, video clips of robberies, traffic management and other critical information enhancing emergency personnel effectiveness when they approach critical situations.

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<sup>1</sup> Proposed Spectrum Utilization Policy, Technical and Licensing Requirements for Broadband Public Safety in the Band 4 940 – 4 990 MHz, Notice No. DGTP-005-05, July 2005.

The WiMAX Forum advocates consideration of the use of the 4.9 GHz band for all potential modes of systems applications. Fixed point-to-point and point-to-multipoint modes will be used to backhaul data and provide connectivity to many locations (from a single to multiple locations). Transportable modes are required to provide quick response to first responder needs and Mobile operations are required to provide high speed data at incident scenes.

*Are there requirements for aeronautical mobile use in the band 4 940-4 950 MHz in Canada? If yes, for what purpose?*

While there may be some requirements for airborne use of 4.9 GHz to support public safety operations, widespread use could result in spectrum inefficiencies and impact terrestrial use of 4.9 GHz. The WiMAX Forum recommends airborne use be permitted on a case-by-case basis.

#### 2.1.2 *System Applications*

*While the Department prefers and encourages the use of “smart” technologies in this band, comment is sought as to whether there is a requirement to accommodate equipment which is only capable of operating on specific channels.*

The WiMAX Forum recommends that no requirement be made for equipment to be deployed with “smart” technologies in 4.9 GHz. “Smart” technologies such as are being deployed at 5 GHz were required to enable co-existence in the band between radar systems and wireless access systems including Radio Local Area Networks (RLAN) deployments; such a requirement is not needed for the 4.9 GHz band. The WiMAX Forum believes that to enable compatibility with the US, a flexible channeling plan be implemented. This will offer Canadian agencies the most cost effective equipment based on the larger Canadian/US marketplace.

#### 2.1.3 *Channeling Plan*

*The Department seeks comment on the proposal to adopt this RF channelling plan. Is there a requirement for separate channels for fixed and mobile applications, etc? Provide rationale if an alternative plan is preferred.*

The WiMAX Forum supports the channeling plan proposed in section 3.3 of the consultation. The combination of adopting smaller channels (ten 1 MHz wide channels and eight 5 MHz wide channels) and permitting flexibility by aggregation will result in a plan that best addresses public safety requirements for present and future applications. Furthermore compatibility is ensured with the US channel plan for the band and together with anticipated common characteristics shared with systems in other frequency ranges, this will maximize the corresponding benefits for Canadian users as noted above.

#### 2.1.4 *Incumbents*

*Consequently, the Department sees no need for any transition measures and immediately places a moratorium on the licensing and use of Government of Canada (GoC) fixed systems in the band 4 940-4 990 MHz.*

The WiMAX Forum supports the Department’s actions as it will foster the transition to public safety broadband applications.

## **2.2 Eligibility**

*The Department is proposing that access to the band 4 940-4 990 MHz will be given according to the same criteria as described above<sup>2</sup> (section 4.0). Comments are invited on this proposal.*

The WiMAX Forum agrees with the 3 categories and the hierarchy of safety service providers. Ensuring that the spectrum is used for protection of life and property is the primary goal for applications using this spectrum. Expanding use in the flexible manner suggested will provide access by a variety of entities and will increase the effectiveness of public safety communications, foster interoperability and further security initiatives.

*Moreover, the Department seeks comment on whether flexibility should be considered, in certain areas of the country, where priority needs have been fully met and significant unused frequencies remain.*

Flexibility could be considered in certain areas where priority needs have been fully met but arrangements for access must place public safety communications over the needs of non-public safety communications for non-critical activities

## **2.3 Licensing Issues**

*The Department is of the view that the issuance of spectrum licenses as described above will best accommodate these uses. Comments are invited on the proposal.<sup>3</sup>*

The WiMAX Forum supports the proposal that the licenses be issued to eligible licensees on a non-exclusive basis covering their entire area of jurisdiction. Furthermore we support the Department’s proposal that licensees in the same or overlapping geographic areas would coordinate and plan their usage of the band. With these safeguards no requirement for “smart radio” need be, or should be, specified for access to this band.

*If comments support the accommodation of permanent fixed point-to-point operations, please indicate whether there should be a requirement for licensing on a site-by-site basis.*

The WiMAX forum supports the accommodation of permanent fixed point-to-point operations that are needed as part of a mobile/portable system, such operations could be used to meet communications needs between public safety operations or the need to back haul needs for various “hot spot” or mesh networks. Licensing for point-to-point links can be on a site-by-site nature subject to coordination with other licensees.

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<sup>2</sup> DGTP-005-05 at section 4.0.

<sup>3</sup> DGTP-005-05 at section 5.1 and 5.2.

*The Department invites alternative proposals for licensing of the services. Provide details as to which specific aspects of the alternative proposal you consider to be favourable.*

The WiMAX forum has no additional views other than those expressed in this contribution.

*The Department invites comment on the license term.*

The WiMAX Forum supports that the license term be 10-years as suggested by the Department.

*Please provide your comments on the proposed license fee associated with a spectrum license in this band. The Department invites comments on any issues related to the fee as proposed and also invites comments on ideas or proposals for ways to improve the service to which the fee relates.*

The WiMAX Forum recommends that license fees are kept to absolute minimum (recovery of costs only), fees will impact the deployment of and ultimate provision of services to meet the needs of first responders. We note that public safety cannot be expected to pay fees based on commercial use of spectrum due to the different financing structures. The general public as a whole will benefit from public safety use of the band due to the value of enhanced services being provided, even if no fee were imposed.

*Please provide comments on whether this service standard is appropriate.<sup>4</sup>*

The service standard of four weeks from receipt of a complete application is too short of a time to completely build out an area given normal requirements for public safety systems. The WiMAX Forum supports a more reasonable build out requirement be based on consultation with public safety entities. For example a one or two year build-out process may be required for some of the more complex systems which cover wide areas.

## **2.4 Technical Issues**

*Radio Astronomy - The Department therefore is requesting comments on what restrictions and technical criteria public safety operations should observe in order to protect the radio astronomy service in the band 4 950-4 990 MHz in Canada. Provide a rationale for the proposal.*

The WiMAX Forum suggests the Department adopt the approach that every practicable effort will be made to avoid the assignment of frequencies to stations in the fixed and mobile services that could interfere with radio astronomy operations with-in specific geographic zones about the sites. A procedure similar to that implemented in SRSP-301.4 regarding the protection of the observatory near Penticton, B.C. could be adopted to resolve any localized frequency assignment issues. The Forum notes that information regarding the location and size of those zones need to be determined.

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<sup>4</sup> DGTP-005-05 at Section 5.7.

*Technical Standards for the Mobile Service - The Department seeks comments on whether there is a requirement for interoperable communications in the band 4 940-4 990 MHz and if so, whether there is a requirement for a dedicated channel for interoperability purposes. In addition, the Department seeks comments on whether it should recommend a common/open standard (e.g. the Media Access Control and physical layers) for equipment used by public safety agencies in the band 4 940-4 990 MHz. If yes, what should it be? Provide technical rationale for the proposed common/open standard.*

The WiMAX forum is of the strong opinion that spectrum should be allocated in a technology neutral manner. Therefore we see no requirement for specification of a common/open standard for equipment to be used in the 4 940 – 4 990 MHz band.

Other:

To support harmonization with the US operation the WiMAX forum would like to submit that the Department considers adopting power levels and emissions masks as decided by the US.<sup>5</sup> A common power requirement and emission mask will foster the availability of equipment to meet the needs of public safety using the 4.9 GHz band.

### **3 Conclusion**

The WiMAX Forum commends the Department for taking action in opening the 4.9 GHz band to bring the benefits of wireless broadband connectivity to public safety agencies. We look forward to working with Department as it considers the proposals supported by the WiMAX Forum.

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#### **About WiMAX Forum™**

The WiMAX Forum is an industry-led, non-profit corporation formed to promote and certify the compatibility and interoperability of broadband wireless products using the IEEE 802.16 and ETSI HiperMAN wireless MAN specifications. The forum's goal is to accelerate the introduction of these devices into the marketplace. WiMAX Forum Certified™ products will be fully interoperable and support Metropolitan Broadband Fixed and Portable Applications. For more information about the WiMAX Forum and its activities, please visit [www.WiMAXForum.org](http://www.WiMAXForum.org).

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<sup>5</sup> See FCC rules at 47 CFR 90.210 and 47 CFR 90.1215, it should be noted that these rules were updated by the FCC in November of 2004.