2006-09-05

R.W. McCaughern  
Director General  
Spectrum Engineering Branch Industry Canada  
300 Slater Street,  
Ottawa, ON  
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Subject: Radio Advisory Board of Canada Response to  
Canada Gazette Notice: SMSE-005-06 dated 2006-06-03  
Consultation Paper on Public Safety Radio Interoperability Guidelines  

Dear Dr. McCaughern;

The Radio Advisory Board of Canada is pleased to respond to Canada Gazette Notice SMSE-005-06.  

The Board’s response, prepared by the Public Safety Subcommittee, is attached.  

This response was balloted to Board members. Fifteen of the RABC’s 21 members responded as follows: 3 Approved, 7 Approved with comment, 5 Abstained. There were no Disapprove ballots.  

The Sponsor Members’ comments (which form in integral part of the RABC’s response) are:  

From Radio Amateurs of Canada:  

After point 7, pages 8 add the following:  

“The Amateur Radio Emergency Service, a nation wide community resource that is capable of both voice and data, is completely overlooked by IC and the RABC. The ARES should be included as Point #8 as “a useful ad hoc complement to traditional public systems”, particularly when public systems fail for any reason.”  

On page 9 after para 4 add;  

“The ARES should be included as being a community resource capable of providing interoperable communications, to supplement and support existing methods.”  

After other issues the 1st para add;
“The Department should facilitate the interoperability cause by recognizing and encouraging the Amateur Radio Service, in particular the ARES, and specifically expanding the authority of that existing community resource to operate out of band when an emergency situation requires supplemental interoperability.”

**From Government of Ontario, Solicitor General, OPP**

The Government of Ontario accepts the RABC Response to SMSE-005-06, however we will also be responding separately to Industry Canada with our own additional comments as well.

**From the Royal Canadian Mounted Police**

The RCMP fully supports the RABC response to the Consultation Paper on Radio Interoperability Guidelines by the Department. In particular, the RCMP supports the alternative approaches proposed by the RABC that the Department could explore within its mandate to advance the radio interoperability between public safety users. The RCMP also agrees with the need of a Canadian public safety advisory body in order to achieve a national or regional consensus on what is required to achieve interoperability. The RCMP has provided additional comments in a separate response.

**From Bell Telecom Group**

1. We see a need to mention that secure communications among the users of the system is essential.
2. Real-time voice, data and video should be part of public safety requirements implying the use of not just the traditional voice devices but also multi-mode and maybe multi-band devices.
3. There is a need for a determination on how the various spectral bands can be best utilized (e.g., narrowband channels are best for voice, lower frequencies have better propagation characteristics thus more RF coverage), and maybe the context of priority for the applications (e.g., voice – 1st, video – 2nd, data – 3rd) when the system becomes congested. For example, in a mission critical scenario what and how much of the band can be used for backhaul purposes?
4. There is merit in including spectrum/capacity and coverage requirements. That is, public safety system(s) should be interoperable inside buildings.
5. For ease of interoperability, there is a need to have IP-based network(s) as communications industry moves forward with IP-centric networks. The use of standards-based wireless equipment/devices will further provide an added advantage for lower layer interoperability.

**From APCO Canada**

APCO Canada concurs with the RABC Response and wishes to emphasize that “interoperability” has many different meanings within public safety communications,
dependant on many different factors. Spectrum allocation may be a small part of the larger puzzle, but it is the key. No spectrum – no interoperability.

From TELUS

TELUS strongly supports the addition by the RABC of Method 7 – “Public Carrier and other Commercial Systems”. In our view, the important role and major benefits that public carrier and commercial systems (“PCCS”) can and do play regarding interoperability is an area that is far too often overlooked by the public safety community. Indeed, the fact that PCCS received limited consideration in the original discussion paper is a case in point.

Indeed, even with the addition of Method 7 the RABC response does not fully nor adequately address the significance of PCCS in a number of respects:

1. **The role of PCCS is far broader than as stated within the RABC comments**

The RABC comments regarding PCCS systems refer only to their “providing a useful ad hoc complement to existing public safety systems” and their use in “assisting with multi-jurisdictional large event and disaster relief efforts”.

While both statements are accurate and important and can be expected to continue in the future, TELUS believes that both the Department as well as the Public Safety community ought not to ignore or overlook the broader vital role PCCS systems play.

TELUS would note, for example, that in certain cases PCCS systems have fully replaced traditional public safety systems and are being utilized to provide primary voice and data communications to front line officers. In many other situations, PCCS systems serve other types of public safety traffic in areas such as under-cover surveillance, supervisory roles, parking officers, etc. In yet other situations, agencies often utilize the interoperability benefits of PCCS systems in a multi-jurisdictional manner for day-to-day operational needs such as sharing of helicopter communications for example.

Therefore, it is not accurate to say that the use of such systems is restricted to simply large event and disaster relief efforts. Indeed, the benefits of PCCS in terms of interoperability and in many other respects as more fully described below can be extremely effective for Public Safety and important for small and medium sized events and day-to-day operations of local and regional public safety activities as well.

2. **Interoperability benefits of PCCS for Public Safety**

PCCS networks that are deployed today already possess some of the key interoperability benefits that Public Safety (PS) agencies currently seek. Along with far superior capacity and coverage than most individual or shared multi-jurisdictional systems, PCCS systems inherently contain two additional important interoperability elements sought by PS agencies. These are a common spectrum pool and common protocol.

The use of common spectrum throughout a PCCS network ensures that these systems are effectively able to deal with any given PS requirement or event ranging from regular day to day operation through to a full scale disaster relief effort. The use of common spectrum
together with the use of a common protocol further ensures that subscriber equipment that may need to be deployed in a given area is immediately capable of operating on the assigned channels with no need for any programming or other network modifications. In this manner, PCCS provide PS responders with immediately interoperable communications functionality upon arriving at a site. Further, PCCS networks are designed and available to provide state of the art voice and data services to meet the demanding requirements of the PS community.

3. **Some of the other benefits of PCCS for Public Safety**

**Evergreening** – carriers are constantly upgrading hardware and software throughout their respective networks as part of regular maintenance programs to improve service for subscribers and continually enhance features and functionality so users have state-of-the-art communications capabilities. The significant cost and effort of this upgrading process is typically cost prohibitive for individual or multi-disciplinary public safety systems.

**Low Cost and Variety of Subscriber equipment** – Because of the high volume of subscriber gear typically manufactured for use on PCCS, a wide variety and availability of state of the art subscriber equipment is generally available. Furthermore, the cost for subscriber equipment is typically far more economical than traditional PS subscriber equipment.

**From Electro-Federation of Canada**

In addition to seeking effective interoperability between Public Safety organizations in New Spectrum Bands, Industry Canada should also seek to ensure such interoperability in existing Public Spectrum Bands. Thus, when requests to modifying current spectrum utilization plan requirements are made by any Public Safety agency, those requests should include both an interoperability spectrum utilization plan and agreements between adjacent agencies.

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Yours truly

Paul Frew
President
Radio Advisory Board of Canada Response to
Canada Gazette Notice: SMSE-005-06 dated 2006-06-03
Consultation Paper on Public Safety Radio Interoperability Guidelines

General Comments

The Radio Advisory Board of Canada (RABC) is pleased to respond to Canada Gazette Notice SMSE-005-06 on Public Safety Radio Interoperability Guidelines. The Board commends the Department for the timely release of this consultation.

Given the increasingly diverse set of public safety spectrum possibilities, public safety users and their radio equipment, it is timely that Industry Canada has initiated this Consultation. The interoperability issues are considered an important matter for our public safety Board members, particularly with the recent release of two new public safety bands in Canada, 700 MHz and 4.9 GHz, and with respect to their spectrum and utilization policies.

The RABC had previously provided substantive comments to Industry Canada on the issue of interoperability. These previous comments appear to still be directly relevant to this consultation.12345

The Board acknowledges the tremendous efforts from the Department over the past years towards making radio spectrum available to public safety and its interest in fostering interoperability measures. The complexity of the task at hand is enormous as it is difficult to isolate the technical questions from other issues such as governance, funding and operations. There is also a requirement for the Department to act now on the interoperability questions because of the demand for spectrum. It is hoped that the comments provided herein will aid the Department in the development of public safety radio interoperability guidelines that are both effective and sufficiently flexible to accommodate the different needs of public safety.

2 National Public Safety Radiocommunications Conference held in Ottawa in March 2002
3 Comments on Canada Gazette Notice DGTP-002-04: Mobile Service Allocation Decision and Designation of Spectrum for Public Safety in the Frequency Band 746-806 MHz (SP-746 MHz) (2005-01-14)
4 Response to Canada Gazette Notice DGTP-005-05, Proposed Spectrum Utilization Policy, Technical and Licensing Requirements for Broadband Public Safety in the Band 4 940-4 990 MHz (2005-10-31)
5 Response to Canada Gazette Notice DGTP-004-05, Proposals and Changes to the Spectrum in Certain Bands Below 1.7 GHz, Part 1, Section 6, Multi-Use Radios in the 150 MHz Band on MURS (2006-04-19)
Question #1

(a) Do the above definitions accurately reflect the concept of radio interoperability?

The Board supports the radio interoperability definition proposed by the Department in the consultation document: “The capability of a public safety agency to communicate by radio (either directly or via a network) with another public safety agency, on demand (planned and unplanned) and in real time”.

The Board notes that the radio interoperability definition is similar to that originally proposed by the RABC\(^6\).

Notwithstanding the above, the Department may take under consideration that some public safety organizations often use additional qualifiers to the generic definition proposed by the Department such “voice & data” and “when authorized”\(^7\) when applying the definition to other areas such as “minimum levels” and guidelines for interoperability. Note that these qualifiers may place important technical constraints on equipment functionality for interoperability.

These qualifiers emphasize the operational diversity of the interoperability requirement. Many public safety agencies do not currently consider data communications to be mission critical. Others view interoperability for new data technologies and applications as essential. Similarly, some agencies require limited “on demand” or “ad-hoc” interagency communications for day-to-day circumstances while others require a formalized command structure to authorize and administrate any mode of inter-agency communication.

The Board also notes that while being essential, interoperability is a very small fraction of the total communications and spectrum utilization requirement of Public Safety. In most public safety incident management models, interoperability as an inter-agency communications mode is a command communication requirement. However, in addition, visiting uniform police or fire platoons must retain the capability of autonomous communication as well as communication with the inter-agency command structure. In short, the definition should not imply that “everyone needs to communicate with everyone else”.

In summary, the Board recognizes the need to adopt a “basic” definition for interoperability that is context and technology neutral. The one proposed by the Department would meet these criteria.

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\(^6\) The RABC proposed the following definition in its Comments on Industry Canada Discussion Document, Proposal for Interoperability Spectrum Use by Public Safety Organizations in Canada (2002), page 1 and 2 “The ability of public safety personnel from one agency to communicate by radio (either directly or via a communications centre) with personnel from another agency, on demand (planned and unplanned) and in real time”.

\(^7\) Canadian Association of Chiefs of Police, Resolutions adopted at the 100th Annual Conference August, 2005 Ottawa, Ontario. Resolution #2005-05 defines Radio Communications Interoperability as follows “R.I. can be defined as the ability for all first responders to exchange both voice and data communications efficiently and transparently, when and where required and as authorized.”

(b) Are the ways of classifying radio interoperability correctly stated?

The Department has correctly captured the ways of classifying radio interoperability. As indicated in the Board response in 2002, “the RABC agrees with the definition of infrastructure-independent and infrastructure-dependent, and that these are the two generally accepted methods in which interoperability occurs”.

The Board also supports the multi-jurisdictional interoperability (MJI) and multi-disciplinary interoperability (MDI) definitions as outlined in this section of the consultation document.

(c) Are there other operating environments for radio interoperability that are not correctly captured by the three identified here?

According to the Department, “there are different radio interoperability operating environments for public safety that impose different requirements on the use of public safety applications and therefore on the spectrum required”. The Department classifies these environments in three groups; Day-to-day operations, Planned Events, Large Unplanned Events and Disaster Relief Operations.

The Board agrees with these broad categories of operating environments for radio interoperability. However, further clarification is needed.

The volume of interoperable communication required for each of the above classifications for interoperability environment can vary dramatically. In some interoperability situations, there is a need for only low-levels of interoperability information transfer and relatively simple solutions (e.g. guest radios) may suffice. In other situations, there may be large teams of emergency personnel cooperating closely and causing high levels of interoperability traffic and thus needing enhanced interoperability system flexibility with consequential technical impact.

The Board recommends that the Department further categorize the 3 classifications into the following:

i) interoperability traffic that falls within the capacity of the system;
ii) interoperability traffic that exceeds the capacity of the system;
iii) those that are within the RF coverage area; and,
iv) those that are not within the coverage area of the agencies system.

The Board notes further that underlying these three operating environments, there is the need to accommodate the interoperability requirements of a wider scope of public safety agencies than the traditional definition of police, fire and ambulance.8 Today’s interoperability environments should include environmental agencies; air, rail and road transportation; customs and immigration just to mention a few.

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8 RABC Comments on Industry Canada Discussion Document, Proposal for Interoperability Spectrum Use by Public Safety Organizations in Canada (2002) “The definition of public safety was traditionally defined as police, fire and ambulance. With the emergence of our new technological world, the definition has taken a wider meaning. Today we have to include environmental agencies; air, rail and road transportation, traffic controllers, customs, and immigration just to mention a few”.

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(a) Does the above hierarchy adequately describe the various levels of radio interoperability that are achievable between public safety users?

The Board supports the various methods of radio interoperability proposed by the Department in section 3 of its consultation paper. These are generally accepted by the industry and by the public safety users. Two additional methods have also been proposed later in this section.

In general the RABC does not support the Department's classification of interoperability methods as a hierarchy of increasingly “better” capabilities. Each method has its own benefits (and deficiencies) depending on the requirements and the situation to which they are applied. It is true that some methods are more basic or limited and others more capable, purely in terms of interoperability. However, when the user requirements are taken into consideration the ranking may change.

In addition, it is possible that a variety of interoperability methods will be simultaneously deployed. This would be more prevalent in current frequency bands where agencies may operate as “technological islands” and have developed a series of temporary and permanent interoperability solutions.

Therefore the Board proposes that the description of “Levels of Radio Interoperability” be changed to “Methods of Radio Interoperability”.

Situations where diverse emergency teams operate in a totally independent technological manner may foster inefficient use of spectrum. Use of modern systems may offer significant flexibility in equipment pooling while retaining administrative independence where needed and result in much higher system spectrum efficiency. Interoperability needs may further compound spectral inefficiencies, if the “solution” is to attempt to overlay different technologies for low levels of interoperability traffic. On the other hand if the interoperability traffic can share the existing facilities without causing system overload, then system spectral efficiency should improve.

Retention of spectrum “in reserve” to handle unexpected major incidents, should not be viewed as inefficiency, but rather as an “investment” for public safety.

Please find below additional comments provided for each “method” proposed by the Department.

1 - Exchange Radios at the Incident Scene

This method would be equally acceptable for inter-agency and multi-jurisdictional interoperability with individualized systems. It is noted that radios are not actually exchanged, they are provided to the guest agency by the host agency. A more correct label for this method may be “Guest Radio provided by host”.

If this solution were adopted for large planned, unplanned, or disaster relief MJI scenarios, each host jurisdiction would be required to inventory and maintain sufficient terminal equipment for all potential visiting agencies. Furthermore, all host radio communication infrastructure would have to be designed with additional idle capacity to accommodate the visiting users. This approach would be costly and could be highly spectrum inefficient for a general solution. However, it could be utilized on a limited basis for command communications during large events, emergencies or
disaster relief operations and suitable low-traffic environments. In addition, this method requires some time (hours) to physically distribute radios and may not perform well when rapid response is needed.

2 - Gateway/Network

Public Safety has been utilizing this method of interoperability in day-to-day inter-agency operations for many decades. Newer systems incorporate more advanced techniques enabling a larger variety of networks and bands to interoperate. However, when contemplating this approach as a potential solution to high-traffic large events and disaster relief operations, factors such as host network channel capacity and terminal equipment compatibility could be significant barriers to the implementation. This solution is applicable for command and low-traffic operations for jurisdictions with individualized systems and visiting multi-jurisdictional operations using mutual-aid channels.

The gateway is neither spectrally efficient nor spectrally inefficient – it neither enhances nor degrades the existing spectral efficiency – it simply interconnects the existing radio facilities which may be either efficient or not on their own. However as it is capable of interconnecting diverse radio networks, it does not encourage the replacement of dated radio equipment with modern new radio equipment.

Gateway solutions clearly need substantial pre-planning (days / months) but can be created on a more ad hoc (hours) basis in emergency. With pre-planning, jurisdictions with individualized systems can provide high-traffic interoperability at minimal cost as each team uses their own equipment and the networking costs can be shared and flexibly enhanced as needed. These solutions can efficiently bridge between diverse networks and diverse frequency bands and can provide a substantial degree of technological and regulatory future-proofing. The network / gateway can offer tight control of access enabling rapid (seconds / minutes) and dynamic creation of sub-nets as needed by the situation. The network component can be made secure, though the “weak” link may be the end-radios – depending on their level of sophistication.

Perhaps the most significant weakness to this method is that in a multi-jurisdictional situation an agency that moves from its geographic area into another agencies’ area (to provide support) may no longer be able to communicate due to a lack of infrastructure and/or spectrum access.

3 - Shared Mutual Aid Channels with a Common Radio Equipment Standard

The utilization of shared (mutual aid, interoperability or other) channels across many public safety bands in combination with the above Gateway (patch) functionality has been successfully implemented for low-interoperability traffic multi-jurisdictional in day-to-day, planned and emergency operations and low-traffic inter-agency operations for jurisdictions with individualized systems. Mutual aid channels also allow agencies to go outside their own coverage area and still communicate with agencies.

Mutual aid radio channels can be considered as a very simple version of a network solution permitting virtually instantaneous interoperability access for low traffic levels. It is frequently only useful if a single radio band is being used by the diverse teams in a locality. Mutual aid channels can provide some commonality between radios compliant to different radio standards. The size of the “mutual-aid” band is usually dictated by the regulator and is thus inflexible in handling large scale emergencies. In bands where common mutual-aid radio standards are
deployed, some “dynamic mutual aid channel capability could be temporarily created with the concurrence of the various spectrum owners.

The RABC recommends that Industry Canada provide mutual aid channels for public safety in the VHF and UHF bands as soon as possible.

4 - Individual Standards-based Systems

Some confusion could exist with the description provided by the Department for this “method” and with the next “method”, Common Standards-based Systems. The Board interprets this “method” as agencies with similar jurisdictional areas having a shared infrastructure and using the same technology or common standard (often proprietary).

As stated in the consultation background section, the Department has successfully encouraged the commissioning of large multi-disciplinary / multi-jurisdictional trunked radio networks commonly referred to as Regional, or Municipal systems. These networks are both cost and spectral efficient due to their priority access and multi-disciplinary utilization. In addition they readily provide inter-agency interoperability capabilities for all system users and limited mutual-aid channel low-traffic multi-jurisdictional interoperability for visiting agencies when needed. However, they do not provide capabilities for high-traffic large scale emergency, planned event and disaster relief operations beyond command communications for visiting agencies due to either equipment incompatibility or network loading limitations.

5- Common Standards-based Systems

Common Standards-based Systems build upon the common radio concept of the “individual standards” solution and extends it to a much larger area and significantly improves the ability to interoperate when required. Due to equipment compatibility such systems have the potential to more easily support interoperability traffic environments for both visiting command and uniform field users. Multilateral interoperability agreements between agencies would allow for visiting radios to be pre-registered on host networks along with suitable encryption key management. While Common Standards-based Systems can more readily accommodate visiting users, the additional interoperability traffic generated by visiting agencies during large unplanned events can exceed the capacity of the network if not accounted for. Current networks are carefully designed to meet the peak loading requirements of all local users (agencies) but not under emergency or disaster operating environments with the addition of interoperable visiting agencies. Channel loading guidelines do not allow for additional margin beyond this “local” peak loading. As a result, an increase of the user population as little as 20% during a large scale event or disaster relief operation could overload the host system. Clearly, in order to accommodate the influx of visiting users additional spectrum and infrastructure must be added to these networks. The optimal number of additional channels required for this method to be effective is unique to each installation and dependent upon many factors including the ratio of “local” vs. “visiting” users.

This method could allow for additional trunking efficiencies due to sharing of any excess capacity. Given the synergy between the compatible equipment, efficient use of available spectrum should be maximized for any given situation. Clearly widespread deployment of such systems takes significant time and careful investment by the agencies involved.
(b) Are there other levels of radio interoperability which should be included?

The Board proposes two additional radio interoperability methods as described below:

6 - Drop-in Infrastructure

Drop-in infrastructure and portable terminal equipment could, in some cases, address the more difficult multi-jurisdictional large event and disaster relief requirement. With current technologies a completely self-reliant wirelessly linked multisite network with and without gateway interconnectivity to the host network could be erected. Such a capability would alleviate host networks from a requirement to support large scale multi-jurisdictional interoperability and would provide a national backup in the event that a disaster destroys the radio tower infrastructure of the host network. While such networks can be totally stand-alone and autonomous, synergy with existing systems can be achieved, if both are using the same standards-based technology. In congested areas it could be difficult to find, or justify holding, spectrum for this application that could otherwise be put to use for day-to-day activities.

7 - Public Carrier and other Commercial Systems

Public/commercial networks can also assist with the multi-jurisdictional large event and disaster relief requirement. These systems can provide a useful ad hoc complement to traditional public safety systems for the major urban and adjacent rural areas which are within the coverage area of those systems. Carriers may be able to provide many fully activated terminals to a disaster site in less than a few hours. Priority access for Public Safety is essential.

Additional comments on the Interoperability Methods

The Board recognizes that voice and data interoperability methods may differ for the various public safety applications. In discussing the various methods to achieve radio interoperability, it should be emphasized that there could be many different approaches depending on the type of communications involved (voice or data). New technologies such as VOIP and WiMax could have major impact on future public safety communications.

With the increasing use of data communications alongside voice communications, interoperability discussions need to address the potentially different interoperability needs of both types of communication. For example, in some cases it may be useful to disseminate a map graphic showing deployment of emergency personnel to various emergency agencies. However, a specific data information query may use a facility between base and front-line staff with minimal need for interoperability. Similarly in some cases, voice interoperability between teams is important and in other cases not needed. This flexibility of use may place important technical constraints on interoperability options.

Equally while physical interoperability (including radio and infrastructure connectivity) is an important aspect of emergency personnel flexibility, this must be balanced with a “need to know” as some information may be “private” and may compromise privacy concerns or the successful completion of the emergency operation. In such cases, restricted access is desirable. This
limitation may place important technical constraints on interoperability options. Limitations on interoperability may help maintain system stability under overload due to a major event.

The recent decisions made by the Department concerning public safety interoperability in the Spectrum Utilization Policy 4940 MHz and in the Radio System Policy 06 were based on comprehensive consultations with public safety agencies and resulted into different rules of interoperability for voice and data communications9. The Board suggests that these rules are adequate at this time and should be revisited later as technology and applications become more mature and wide-spread.

**Question #3**

(a) The Department seeks comment on the proposal to establish the guidelines outlined in option 3 above, requiring public safety users to meet a minimum level of radio interoperability in frequency bands made available for public safety use. This would be applied as a condition of authorization.

The RABC supports the Department’s proposed option 3, that there be a consultation on the requirements for interoperability when new spectrum is made available for public safety use.

Public safety agencies generally determine the appropriate method of interoperability dependent on the circumstances. It may not always be available due to spectrum and equipment limitations, but seldom due to reluctance on the part of the agency to provide interoperability. The funding issue is very much tied in to what can be achieved in terms of interoperability.

The Board suggests that the Department implement guidelines for interoperability capability very carefully by recognizing that there may be instances when a public safety agency, based on their business case analysis, may not meet the interoperability criteria and provide the best radio communication solution. In such cases, the provisions within the rules should be sufficiently flexible to allow the agency to proceed with their licensing authorization.

As indicated in RABC 2002 comments on interoperability, it is recommended that Industry Canada encourage the use of shared systems, in particular shared trunked radio systems and/or use of common, internationally recognized air interfaces. Maximization of the use of shared systems and common air interfaces reduces the necessity for the use of separate, dedicated, common channels.

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9 The Department in its recent release of the Spectrum Utilization Policy 4940 MHz announced that at this time it “is not establishing a dedicated channel for radio interoperability nor recommending a specific common/open standard” but “will continue to monitor the activities of standards development organizations for a widely adopted broadband public safety standard”.

For the 700 MHz public safety band, the Department states in the new Radio System Policy 06 that: “a public safety agency or its service provider seeking authorization to establish a mobile communication system for the protection of life and property, will have to: be capable of meeting a minimum level of radio interoperability by using mutual aid channels with a shared standard for the band.”

“A suitable level of interoperability among public safety organizations is critical” and “A flexible policy would enable interoperability as required, and take into account shared public safety needs in a given geographic area”...
(b) Are there other approaches to advance the issue of radio interoperability between public safety users that the Department should consider within its mandate?

1. The Department may wish to consider the merits of a national high-traffic interoperability solution for Public Safety and to other government agencies for large scale emergency events and disaster relief operations. The Department may wish to consult on the development of a spectrum plan which would allow for drop-in infrastructure on a national basis.

2. Industry Canada could explore the feasibility of priority access to public carrier networks under declared disaster circumstances with carriers and other government departments.

3. As recommended by the RABC in previous comments to the Department (Spectrum Policy changes below 1.7 GHz and 2002 Comments on Interoperability)\(^\text{10,11}\), providing additional national interoperability channels for public safety in the VHF and UHF bands is one of the important pieces of solving the public safety interoperability puzzle. These additional channels could provide an almost immediate, low cost, benefit to smaller agencies and rural areas. There would be cross-border interoperability benefits as well if these channels are harmonized with the United States interoperability channels.

4. Funding incentives may be desirable to help agencies to upgrade their legacy systems that may not be able to accommodate additional interoperability.

Other Issues

A National entity is required to champion the cause of interoperability between different public safety agencies. Interoperability was identified as a major challenge for public safety organizations in the Canadian Public Safety Radiocommunications Project, established by the Department following the March 2002 National Public Safety Radiocommunications Conference\(^\text{12}\). A key recommendation of the final report was the need for a national lead agency championing interoperability for public safety.

The Department should take a leadership role in encouraging the formation of such a Canadian public safety advisory body comparable to the National Public Safety Telecommunications Council (NPSTC) in the United States. The NPSTC is a federation of associations which provides advice to the FCC and one of its goals is: “to develop and make recommendations to appropriate governmental bodies regarding public safety communications issues and policies that promote greater interoperability and cooperation among local, state, tribal and federal public safety agencies”\(^\text{13}\).

A Canadian public safety advisory body on interoperability could assist in establishing a national or regional consensus on what is required to achieve interoperability. It could further assist the

\(^{10}\) See footnote 5

\(^{11}\) See footnote 1

\(^{12}\) RBP Associates and L’Abbé Consulting Services, Public Safety Radiocommunications Project, Final Report, March 2003

\(^{13}\) National Public Safety Telecommunications Council (NPSTC) Charter: The Collective Voice of Public Safety Communications http://www.npste.org/charter.jsp
Department in defining the minimum required elements of the interoperability guidelines for new public safety spectrum.

User organizations such as APCO/PSEPC and others should determine what are the operational requirements of the public safety user community.

The RABC supports an overall Canadian framework for interoperability as per recommended in the consultation DGTP-002-0414 that should provide or identify the following steps for new public safety spectrum:

- A definition(s) of interoperability in terms of operational requirements
- Reasonable, incremental steps or goals towards interoperability
- Minimum standards for interoperability
- Sample agreements for interoperability between public safety organizations (e.g. between fire and police, municipal police and provincial police or between to adjacent municipal organizations)
- Possible funding models to support the additional costs of interoperability
- A government department(s) or organization(s) responsible for supporting the framework

The RABC remains committed to provide technical advice to the Department that would help advancing the cause of radio communications interoperability for public safety in Canada.

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14 The Electro-Federation Canada (EFC) Comments as part of the Radio Advisory Board of Canada Letter 2005-01-14 on Canada Gazette Notice DGTP-002-04: Mobile Service Allocation Decision and Designation of Spectrum for Public Safety in the Frequency Band 746-806 MHz (SP-746 MHz) dated 2004-10-02