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Dear Sir:

Response to Canada Gazette Notice DGTP-004-05 -
Dated - Nov. 29 2005 Proposals and Changes to the
Spectrum in Certain Bands Below 1.7 GHz

I wish to submit my comments regarding the proposals that accompanied the above mentioned Canada Gazette Notice. My comments will be limited exclusively to Section 5 - Proposed Spectrum Designations in the Frequency Band 216 to 220 MHz. I have a long standing interest in the use of this particular section of the radio spectrum.

My previous submission in this matter was included in the Industry Canada document, Proposed Spectrum Allocation and Utilization in the Range 30-960 MHz. July 17 1993, Page 61, 62. A new updated and improved band plan is included at the end of this submission

I have been licensed as an Amateur Radio operator for 55 years with the call sign VE3OV. After a successful career covering both communications and broadcasting, I retired in 1998. Since being retired, I have been a Radio Amateurs of Canada (RAC) appointee as the District Emergency Coordinator (DEC) for the City of Toronto in the Amateur Radio Emergency Service (ARES) program. I am the licence trustee for Amateur Radio station VE3EMO located in the Emergency Operations Centre for Emergency Management Ontario (EMO). I also play an ARES leadership role in the operation of the Amateur Radio station VA3EOT located in the Emergency Operations Centre for the City of Toronto. I have also monitored Toronto emergency service radio communications for over 50 years. I am also a member of a Toronto Police Community Liaison Committee.

I wish to raise two key points that I will base my comments on.

1 - - The Canadian general public has yet to be provided by Industry Canada with a small section of the radio spectrum that can provide the means to engage in meaningful and reliable mobile radio communications in the simplex mode, directly with other similarly equipped mobile radio users. This is not to be confused with the person to person communications provided by the telephone system based cellular radio communications networks or with either the poorly planned GRS allocation at 27 MHz. or low power UHF GMRS. It can be argued that there is no public demand for such a service. It can also be said that until such a reliable service is readily available, there will be no demand. The general public simply makes use of whatever is made available to them. Nevertheless for public safety purposes, there does exist a clearly identified need for a reliable general public mobile radio communications system. This is an important public need that Industry Canada should strive to provide for.

2 - - Emergency Services throughout North America have said for many years that they require radio interoperability among themselves, especially the first response units arriving at most emergency occurrences. What is being asked for is the ability for any unit of any service being able to talk directly by radio with any unit of any other emergency service on request, at any time, irregardless of what radio model is being used. Radio communication planners and regulators both in Canada and the U.S. have long been stymied on how to easily satisfy this simple but important request. It is very important that a workable solution to this nation-wide public safety problem be found at this time because this relates to the saving of countless lives in danger. Emergency situations are getting more complex as time goes on and reliable radio communications between attending agencies plays a key role.

With those two important points in mind, I will answer the three key questions presented in the consultation paper regards Proposed Spectrum Designations in the Frequency Band 216-220 MHz.

Question - 1

What types of new radio applications could be accommodated in the 216-220 MHz band including land mobile services ?

Answer -

The lower two megahertz section, 216-218 MHz. should be allocated at this time, only for repeater applications to be used by government or public safety agencies. The upper 218-220 MHz section should be allocated exclusively for a multi-service interoperability simplex application. That this amount of spectrum is being made available at this time for land mobile use, demands that a special application that needs a large amount of spectrum be accommodated. Otherwise the opportunity to establish such a unique and important application may be irretrievably lost. The goal of achieving radio communications interoperability has been a very difficult and elusive goal for planners to achieve. Any other radio application that could use the 218 to 220 spectrum should be assigned to either the 216-218 or 220-222 MHz repeater segments.

Question - 2

Based on the previous, what criteria should be considered in the development of a frequency band plan and technical standards to further the use of this band ?

Answer -

The criteria for a new mobile interoperability band plan in the 218-220 MHz section is the opposite of that which applies to every other radio frequency band plan. Privacy is not the primary criteria for this band. The ability of every user to easily and quickly communicate with every other user in this radio band is the key criteria. Some frequencies will be one way broadcast frequencies. Having clear undistorted audio with good fidelity will also be more of a goal in this band rather than having the narrowest bandwidth possible under current radio engineering practice. Having a minimum level of receiver sensitivity could be an important criteria. Easy operator change of both channel frequency and tone squelch frequency is a needed criteria. Thinking outside of the box is a requirement of Industry Canada planners when it comes to this special unique radio band.

Interoperability would mean that emergency first responders would be able to have radio communications anytime and anywhere as required, not only with units within their own service but with all other radio users including the general public who normally would operate using other types of radios and be on other radio frequencies. Over time, every emergency service vehicle in Canada would come to be equipped with a second radio specifically for this radio service in addition to its regular service equipment.

The unique goal with this new 218-220 MHz band is that any radio belonging to any radio service group will have the ability to communicate in real time, on demand with any other similarly equipped radio user irregardless of service group. That would mean as an example that an aircraft could call a boat and communicate. Any fire truck could call any ambulance and communicate. Any motorist could call the nearest tow truck and communicate. Motorists would also become aware of impending road dangers or weather warnings as they are happening. The uses and benefits are endless.

The development of a workable frequency band plan and the technical standards that would apply would be worked out in consultation with all user groups and through industry consultation by the Radio Advisory Board of Canada (RABC). The Communications Research Centre Canada (CRC), an agency of Industry Canada, has been working for some time on developing technologies to improve radio communications during emergency situations. They should now be told that this key section of radio spectrum of 216-220 MHz has now been allocated solely to fulfill just such an important goal. They should proceed to test the needed equipment and fine tune a Mobile Ad Hoc Network band plan such as that proposed here later in this submission.

Question - 3

Should new radio applications be similar to those in the United States ?

Answer -

The new radio applications should be the exactly the same as those in the United States. That is to say that once the mobile interoperability band plan is in place in Canada and shown to be operating efficiently as planned, the U.S. planners and regulators should be urged by the Canadian government and equipment manufactures, to follow with the same new identical radio application throughout the U.S. Ideally they should do so without any urging needed. They have also been attempting in the past to achieve the same goal of smooth and effortless mobile interoperability with only limited success in some of the bigger U.S. cities, by using cross band repeater technology.

Unlike the process whereby Canada has made several regulatory changes in response to spectrum usage in the U.S., it is the U.S. that would take its direction from a successful, popular and efficient Canadian operation. A Canadian motorist or trucker should be able to use his radio anywhere in North America. Canadian police should be able to talk directly to U.S. police across the international border. The recommended band plan for this new spectrum, will make possible, what has been seemingly impossible to achieve in the past. It is a win-win situation that deserves implementation as soon as possible both in Canada and the U.S.

The following preliminary band plan is an example of how frequency channels in the 218-220 MHz might be designated under the plan proposed above.

Mobile Interoperability Radio Service Band - (MIRS) 218-220 MHz

Rural / Farm mobile stations

Rural / Farm base stations

Marine initial call / brief messages

Marine working channel

Marine shore stations

Aircraft initial call / brief messages

Aircraft working channel

Aircraft ground stations

Group group activity - parades, searches etc.

Utilities Public utility services related

Taxi / Transit local transportation related

Bus inter-city bus transportation related
Train train transportation related
Transportation control centres / station schedule info, etc.
Truck to base working channel
Truck to truck working channel
Truck to truck initial call / brief message
Truck to truck traffic reports
Car to car traffic reports
Car to car initial call / brief message
Car to car working channel
Car to base working channel
Tow Truck initial call / brief message
Motel / Hotel Information
Auto Service / Food Information
Public Event talk In directions / parking, etc.
Travel tourist information / help, etc.
Emergency / public - emergency reporting - City
Emergency / public - emergency working - City
Emergency / public - emergency reporting - Provincial
Emergency / public - emergency working - Provincial

Broadcast - Emergency units to public public receive
Broadcast - Emergency Management to public public receive
Broadcast - Transportation to public public receive
Broadcast - Road information - Prov. roads public receive
Broadcast - Road information - City roads, public receive
Broadcast - Weather report public receive

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- > Emergency units - calling - responding - on scene public receive
 - > Emergency units - group working public receive
 - > Emergency units - non-event chat public receive

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- > Police Communications - intercom no public receive or transmit
 - > Fire Communications - intercom no public receive or transmit
 - > EMS Communications - intercom no public receive or transmit

Some of the above categories will be on multiple frequencies