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**APCO Canada Response to
Canada Gazette Notice No. SMBR-002-98**

Notice No. SMBR-002-98: DTV (Digital Television) Transition Allotment Plan

1. General

APCO Canada welcomes the opportunity to comment on Industry Canada's Notice No. SMBR-002-98 published in Canada Gazette dated June 1, 1998.

Introduction

The ability of public safety agencies to communicate efficiently is vital to the safety and welfare of the citizens they represent. In times of emergencies, the public looks to government, particularly their public safety officials, to act swiftly and correctly while performing the tasks which must be done to save lives, help the injured, and restore order. Most disasters occur without warning, but people still expect a rapid and flawless response on the part of their public safety agencies. There is no room for error. One of the major components of responding to and mitigating a disaster is wireless communications. These wireless communications systems are critical to public safety agencies' ability to protect lives and property and the welfare of the general public.

Fundamental Requirements of Interoperability

The PSWAC (Public Safety Wireless Advisory Committee) in the United States defines interoperability as follows: "Interoperability is the ability of two or more public safety communications systems to interact with one another and exchange information according to a prescribed manner in order to achieve predictable results"

The most critical area of interoperability that should be addressed are those situations where little pre-planning has time to occur. The response and exchange of information via wireless communications for those vital requirements and between various public safety agencies need to happen in a rapid and effective (well coordinated) manner.

It is assumed that voice communications will remain the primary and most prevalent form of public safety communications for the years to come, although data communications applications are growing at an accelerated rate and could be used to supplement voice under special circumstances.

Issues Affecting Interoperability

The most common problems encountered in joint efforts to establish interoperability with other agencies are the lack of available channels, the limitations in financial resources and the use of different frequency bands. Allocation of additional channels in the various bands allocated to public safety would aid greatly the process of establishing communications links with other organizations. Another alternative would be to use radios capable of operating in more than one frequency band, but unfortunately, such equipment is not currently available on the market.

Public Safety's limited spectrum is an issue which affects interoperability and impacts every person in Canada. Whether calling for an ambulance, the fire department, or for the police, the concern is the same: public safety personnel must be able to communicate with each other to protect themselves and to serve this country's citizens. As a nation, we must find a way to provide public safety agencies with the proper resources so that they can carry out their critical functions.

Comments on Need for Interoperability

In the report on the tragic events of December 6, 1989 at Montréal's Polytechnique, the De Coster's working group showed the lack of communications between Police, Fire and Ambulance officers and recommended, for the region of Montréal, to put in place a shared public safety voice and data radio communications system for both day-to-day operation and disaster events and also a Province wide voice and data public safety radio communications system.

Some of the requirements for the Ontario's Province wide radio system, was Interoperability among public safety agencies (police, fire, ambulance), special security and migration to digital from analog technology.

During the Stanley riot in downtown Vancouver, police standing 10 meters away from ambulance attendants could not talk to each other on their radio. When Vancouver police chase a motorist into Burnaby, they can't radio ahead to warn the RCMP there to take over. Mayor Philip Owen said on July 1996, during a press conference At a time when electronic communication is connecting businesses on a global, it makes no sense that a police officer in Burnaby cannot talk to one in Vancouver, or that fire units cannot talk to police at an incident.

We have now in Canada, disasters at a rate never seen before. Just look the flood of July 1996 in Saguenay Québec, the unusual snow storm of December 1996 in Victoria B.C.,

the flooding of the Red River in the spring of 1997, and the ice storm of January 1998 in Québec and Ontario.

During the ice storm of last January 1998 in Québec, the twinning of cities and towns was a big help, but radio communications were deficient. Agencies coming to help brought their own radio equipment. Those radios were useless for working with the receiving city or town radio infrastructure. Radio communications between agencies operating on a same site were also inefficient during the ice storm. Those agencies had to route their radio communications through several dispatch facilities to talk to each other, which created a major communication challenge to those involved. The biggest activity in the Montréal Fire Communication Centre was to relay information. The MUC Police Service had to give service outside their day-to-day working area. Because of lack of radio coverage they had to make some makeshift installations that had to suffer more radio interference than they could bear. It was difficult to find portable radios in sufficient quantities. The MUC Police Service communications channels were overloaded and there was no inter-agencies communications possible in the field.

The ability of Public Safety agencies involved in such incidents to communicate is vital to the safety and welfare of the citizens they represent. In times of emergency, the public looks to government, particularly their Public Safety officials, to act swiftly and correctly and do the things which must be done to save lives, help the injured, and restore order. Most disasters occur without warning, but people still expect a rapid and flawless response on the part of their public safety agencies. There is no room for error. One of the major components of responding to and mitigating a disaster is wireless communications. These wireless communications systems are critical to Public Safety agencies' ability to protect lives and property and the welfare of Public Safety officials.

Potential Additional Spectrum

The introduction of Digital Television (DTV) and the consequent phase-out of analogue TV affords an opportunity to improve efficiency of spectrum usage while simultaneously providing the public with greatly enhanced television service (ATSC A/53 standard). This improvement in spectrum efficiency will be manifested in the release, after a transition period, of TV channels for potential re-assignment. At the present time, it is not known how many TV channels may be released, but the DTV Transition Plan assumes that channels 60-69 could be subject to re-assignment.

Channels 60 to 69 are adjacent to land mobile bands operating in the spectrum range 806-890 MHz. The redeployment of spectrum in lower bands is unlikely to yield spectrum suitable for large trunked systems, thus they will have to be accommodated at 800 MHz or in new spectrum. It should be noted that no new spectrum has been made available for land mobile since 1982, other than the 6 MHz from 800 MHz reserve for public safety. This spectrum, as is the case for all other spectrum, has severe restrictions in the border areas. Further, the current spectrum does not begin to address public safety data needs beyond the year 2000, or indeed even for the present.

United States Activities

PSWAC concluded, in its Final Report, that unless immediate measures are taken to alleviate spectrum shortfalls and promote interoperability, Public Safety agencies will not be able to adequately discharge their obligation to protect life and property in a safe, efficient, and cost effective manner. The PSWAC report represents the best efforts of the Public Safety community to define and document its critical need for communications resources and the spectrum which will support them now and through the year 2010.

The Congressionally mandated reallocation in the United States of channels 60-69, the 746-806 MHz band, provides a clear incentive to make similar provision in Canada. For public safety, the reallocation of 24 MHz, coupled with a mandated early availability, will ensure that suitable equipment will be available in this spectrum, as well as providing the capability of interoperability in border areas. Thus, spectrum efficient digital technology may be expected to be available. Planning being undertaken for this new spectrum takes into account for the first time data communications needs and 125 kHz channels are incorporated into the plan.

DTV Transition Allotment Plan

A long-term goal is to obtain additional spectrum for the various mobile services. A potential candidate has been UHF TV spectrum, and recent U.S. action to make spectrum between 746 and 806 MHz (presently TV channels 60-69) available to land mobile is a welcome move, as is the designation of 24 MHz of this spectrum on an accelerated basis for public safety. The availability of common spectrum, especially for vital public safety operations, would be a worthwhile outcome of any spectrum re-allocation.

One encouraging note of the transition from analogue to digital TV is that once the NTSC channels are switched off, there is a good probability that the TV channels above channel 59 (and possibly 54) would be available for re-allocation. As initial measures towards that goal, the transition allotment plan attempts to minimize use of channels above 59 (rather unsuccessfully, one might add!). The plan further removes vacant allotments on channel 60 and above and pairs DTV channels only with operating stations.

The Canadian transition allotment plan was not successful in avoiding new allotments above channel 59 for two reasons:

- the U.S. plan was created first, producing severe constraints in border areas;
- the Canadian plan accommodated low power stations.

However, should a decision be made to reallocate the spectrum between 746 and 806 MHz, after the phase-out date for analogue TV any stations operating above channel 59 would have to move.

Recommendations

Based on the discussion given above, the following recommendations are made.

1. Industry Canada be requested to undertake a policy consultation on the long-term future of spectrum between 746 and 806 MHz, from the perspective of reallocating this spectrum for mobile services to meet needs beyond the year 2000, in particular for public safety.
2. Special consideration be given to expediting access for public safety to the bands 764-776 MHz and 794-806 MHz (TV channels 63, 64, 68, 69).
3. The needs of public safety be taken into account in establishing the date for transition to DTV and the transfer of DTV stations operating above channel 59 to channels below 59.

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