Response to Consultation Paper on Public Safety Radio Interoperability Guidelines – Notice NO. SMSE-005-06

Submitted by:

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Background on author:

The author has served in roles as a firefighter, company officer, training officer and Chief of Department for over 32 years. I am a member of various fire service organizations, including currently the Past President, of the New Brunswick Association of Fire Chiefs (NBAFC). I currently manage a fire, rescue and ambulance operation that services a population of 25,000 people over an area approximately 100 square miles.

I am a strong advocate of regional tri-service (fire, ambulance, police and 911) joint dispatch as a model to allow ease of inter-operability on a regional basis. I authored the NBAFC’s position paper on 911-Dispatch in New Brunswick in 2003. This paper served as a basis for the announcement by the New Brunswick government of the implementation of 6 Regional 9-11 Public Safety Answering Points (PSAPs) combined with Regional Fire Dispatch Centers. These centers will be responsible for the dispatch of all fire departments within those PSAP's geographical coverage area.

I currently serve on the Department of Public Safety’s Fire Service Dispatch Implementation Committee, that will see these centers evolve into fruition over the next 3 years.

I have also served as a consultant to various fire departments and municipalities on radio communication needs in the past decade.

General Comments:

I welcome the opportunity to comment on the issue of interoperability in the fire service. Although I realize that Industry Canada has a federal mandate to manage radio spectrum nationally, one of the challenges dealing with the fire service, is recognition that fire departments are inherently in Canada creatures of municipal government and therefore somewhat an extension of the provinces. This presents a challenge in obtaining a cohesive national strategy. Therefore, I will restrict my comments relating to New Brunswick, where I feel there is already some commonality worth protecting and improving.
• General comments relating to fire, ambulance and police radio communications
  o Fire Departments generally tend to be concerned with communications on a local basis and/or communication between dispatch center(s) and localized incidents for their operation. They tend to operate at serious incidents in a localized manner, sometimes with large forces requiring coordination of radio activities in hostile environments. Fire Departments are generally dispatched either via electronic (radio activated tones, printer etc) from a local fire station/dispatch center OR in the case of volunteer firefighters by portable radio and/or paging.....generally voice paging. Incident Command dictates that the Incident Commander (IC) have communication with each team or company on scene, and also with a dispatch center. The IC may also elect to have interoperability with other allied agencies (police, ambulance etc) BUT this is not a feature needed by all team members at a scene. Simplicity in a hostile environment is a must for firefighter handling emergency incidents.
  o Ambulance agencies tend to cover wider areas (less dense resources than fire) and be dispatched by a regional and/or provincial centre. Ability to communicate on scene is not as paramount as fire for safety purposes. Ambulance personnel tend to work in teams of two, and for communication purposes are quite limited in portable radio usage in comparison for fire.
  o Police agencies also tend, like ambulance, to cover wider areas than individual fire departments and in many cases require high quality mobile and portable radio coverage due to limited manpower and safety concerns. Additionally, issues of radio security come to the forefront, much more than fire operations, as well as ability to move data for persons/vehicle queries. Data movement for fire service personnel is less of a requirement, than police.

Comments relating to Levels of Radio Interoperability:

• Exchanging Radios at the Incident Scene –

I have been involved in this scenario on a number of occasions. I am also aware, that after the implementation of a province wide integrated digital trunk radio system in Nova Scotia (TMR system) a decade ago, this is an extensively used solution for interoperability today in that province by fire service personnel. It is fraught with problems for a number of reasons:
  • Use of the “interoperability” unit is sometimes infrequent enough and technically different than the normal units an Incident Commander or fire officer is used to.
• This interoperability unit is conditional that communicators are familiar with the operation of said units. I am well aware of incidents, particular large scale incidents, where interoperability units become overwhelmed with radio traffic, some parties in the conversation are unable or unsure as to how to operate units. This is akin to me giving you my cell phone, under emergent conditions, and expecting you to operate it in a timely fashion.

• These interoperability units usually rely on third party infrastructure, which is not owned, controlled or having redundancy (loss of repeater, CPU etc) and which is out of the control of the local fire department.

I would suggest this is NOT a viable alternative, and can very quickly degenerate into an Incident Commander with numerous radios to monitor at an emergency scene.

• Gateway/Network

I would refer to this as sometimes the “black box” solution. Sometimes, this is one way to match different bands (i.e. VHF-UHF-trunk) although manufacturers and/or vendors appear reluctant to want to “make it work” appropriately for fear of jeopardizing potential larger sales of migrating services over to one band spectrum. This has perhaps more potential to work in a non-mobile environment, with a dispatch centre for initial dispatch etc rather than relying on emergency traffic in the field, with the inherent squelch tails, response delays etc that sometimes occur with these interconnected systems. This is a cost effective solution, that does answer the issue of not changing existing users from their different spectrums BUT allowing interoperability issues to be addressed during the occasional large scale incidents.

• Shared Mutual Aid Channels with a Common Radio Equipment Standard

Shared mutual aid channels, in this author’s view, represents a viable option that is perhaps not been pursued as vigorously by various agencies including Industry Canada. The NBAFC strongly advocated in 2000, the use of a Industry Canada VHF simplex frequency, licensed for national use by Industry Canada for the fire service. We discovered this quite by accident, and in New Brunswick many fire departments migrated to this, as well as allied agencies such as RCMP, Department of Natural Resources who also utilized VHF technology as a mechanism of interoperability. There was no cost involved, and it has become quite an effective use of the technology. Ironically, in New Brunswick there are three fire departments utilizing trunk radio technology – two analog and one trunk. Although not located in close proximity to each other, the analog and trunk systems to my knowledge cannot talk to each other, although they were all sold by the same vendor. This is strange indeed. So this issue still centers around what band spectrum one uses, to make this option viable.
• **Individual Standards-based Systems**

I am unsure if this proposal refers to regional based standards or advocates development of standards based on geographical regions or service (i.e. fire standard, police standard etc)

• **Common Standards-based Systems**

I am deeply concerned, that “common standards based systems” infers movement toward an industry trend of “decade marketing” – developing equipment AND bandwith with a 10 year lifespan that becomes non-existent after each decade. Additionally, this technology (i.e. digital trunk) is designed to capture a wide variety of service users, public safety perhaps being only one aspect. My concerns include:

- Very costly with limited life span (7-10 years)
- Equipment Cost 50 – 100% higher than conventional equipment
- No voice paging capability – an essential element for volunteer firefighters
- Remote and/or rural area coverage not acceptable nor a business case for
- Talk-around features in conventional technology not available which removes an important redundancy should repeater/CPU fail or portable units cannot reach repeaters
- Public Safety is increasingly being pushed to the side lines in priority in radio spectrum allocation (i.e. MERS proposal with 150 mhz frequencies)

I have perhaps misunderstood some of what is being proposed in this document, yet I am increasingly concerned that industry is driving initiatives that will have increasing reliance on third party short term solutions, with equipment not unlike cell phone technology……..difficult to operate, limited life span, no redundancy protection, and disposable when broken.

I would suggest that Industry Canada needs to explore some of the following on a go forward basis to address the issue of interoperability:

- Protect existing VHF and UHF frequency bands for public safety. Public Safety should take a **priority** over all other recreational and business users to ensure that the bands are protected.
- Industry Canada should become more transparent in it’s dealings with it’s customers; when I first began in the fire service in the early 70’s license fees were minimal. Our Department now annually spends over $1500 in license fees, with very little return or protection of the same frequency we had 30 years ago. Interference has become increasingly an issue; when
we even identify problem areas IC is reluctant to force the problem to be repaired.

- Industry Canada has no problem to find us for invoice purposes; why must be revert to “surfing the internet” to find policy document in transition or “public consultation” buried in a webpage?
- Industry Canada should be prepared to provide definitive advice to end users (i.e. fire service organizations) as an option to vendor/manufacturers solutions which are slanted toward their marketing objectives; not necessarily real needs.
- I recognize that cross border (Canada-USA) issues are part of the discussion, BUT should not dominate national licensing and spectrum policy.
- Industry Canada should encourage cooperation amongst licensees. In New Brunswick, there are 175 fire departments divided amongst the following spectrum bands:
  - 22 UHF (400 -410 mhz band) departments
  - 2 (800 mhz Analog Trunk band) departments
  - 1 (800 mhz Digital Trunk band) department
  - 150 VHF(147-169 mhz band) departments

  There is obviously some commonality here; but little or no encouragement by Industry Canada to harmonize a few into the larger user band.

I recognize that my comments are relative to New Brunswick, and perhaps not reflective of some of the larger urban issues of available spectrum in larger metropolitan areas. Yet, I believe that a national “one size fits all” is not perhaps attainable. Examination of existing band spectrum, with a view of sharing common frequencies currently in existence should be a priority of Industry Canada.

Clearly these comments reflect a New Brunswick, and perhaps some other regional perspectives…..yet I believe that rather than Industry Canada being swayed by the marketing aspects of the communication industry more attention should be paid to the end user who is paying large license fees to PROTECT their current infrastructure.

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