NPSTC
National Public Safety Telecommunications Council

The Collective Voice of Public Safety Communications

MEMBER ORGANIZATIONS

American Association of State Highway and Transportation Officials

American Radio Relay League

American Red Cross

Association of Public Safety Communications Officials - International

Forestry Conservation Communications Association

International Association of Chiefs of Police

International Association of Emergency Managers

International Association of Fire Chiefs

International Association of Fish and Wildlife Agencies

International Municipal Signal Association

National Association of State Emergency Medical Services Directors

National Association of State Foresters

National Association of State Telecommunications Directors

LIAISON ORGANIZATIONS

Federal Communications Commission

Federal Partnership for Interoperable Communications

Telecommunications Industry Association

US Department of Agriculture

US Department of Justice

NIJ CommTech Program

US Department of Homeland Security

FEMA

SAFECOM Program

US Department of Interior

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January 14, 2005

Mr. Larry Shaw
Director General
Telecommunications Policy Branch
Industry Canada
300 Slater Street
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Submitted By Email to: wireless@ic.gc.ca

Subject: NPSTC Comments in Response to:
Mobile Service Allocation Decision and Designation of Spectrum for Public Safety in the Frequency Band 746-806 MHz (SP-746), *Canada Gazette* – Part 1, Notice. No. DGTP-002-04, October, 2004.

Dear Mr. Shaw:

Attached are Comments of the National Public Safety Telecommunications Council (NPSTC) to the above-referenced consultation.

Sincerely,

Marilyn Ward, Chair

Attachment

January 14, 2005

NPSTC Comments in Response to:

Mobile Service Allocation Decision and Designation of Spectrum for Public Safety in the Frequency Band 746-806 MHz (SP-746), *Canada Gazette* – Part 1, Notice. No. DGTP-002-04, October, 2004.

I. Introduction

The National Public Safety Telecommunications Council ("NPSTC") is a federation of public safety associations whose primary role is to serve as a resource and an advocate for public safety telecommunications. NPSTC explores emerging public safety telecommunications issues and technologies, and develops recommendations to governmental bodies to support the broad goals of promoting public safety telecommunications worldwide.

NPSTC has played a key role in the 700 MHz Public Safety band in the United States. For example, NPSTC has helped facilitate the implementation of recommendations from the Public Safety Wireless Advisory Committee (PSWAC) and the 700 MHz Public Safety National Coordination Committee (NCC). PSWAC was the public safety focal point, which documented the need for additional public safety spectrum, including spectrum from the 700 MHz band. Once the U.S. Congress and Federal Communications Commission allocated 700 MHz band spectrum for Public Safety in the U.S., the NCC was chartered as an official advisory committee to develop technical, operational and regulatory recommendations for the 700 MHz Public Safety band. These recommendations included steps to promote interoperability and spectral efficiency, consistent with user requirements. Many of the public safety representatives who took a leadership role in PSWAC and/or the NCC are also involved in NPSTC. It is with this background and significant experience that NPSTC offers its recommendations regarding the 700 MHz band Public Safety spectrum in Canada.

II. NPSTC Recommendations

NPSTC congratulates Industry Canada for taking the leadership to dedicate spectrum in the 700 MHz band for Public Safety use in Canada and to issue this consultation requesting input on regulations for this band. NPSTC believes there is no higher priority use for spectrum than its use to support the Public Safety responders responsible for protecting the life and property of every member of the public. Accordingly, NPSTC fully supports Industry Canada's allocation of 12 MHz of spectrum at 764-770/794-800 MHz (overlapping TV channels 63 and 68) for Public Safety, and encourages further steps to allocate the additional 12 MHz at 770-

776/800-806 (overlapping TV channels 64 and 69) for Public Safety as well. These allocations and the clearing of television from this band will be of significant benefit to Public Safety and all those it serves.

NPSTC believes that Public Safety users in Canada would benefit from the adoption of rules that are generally compatible with those adopted for the 700 MHz Public Safety spectrum in the United States. Such compatibility could yield economies of scale for equipment specifically designed to meet Public Safety requirements that Canadian Public Safety users may not otherwise experience. In addition, there is increased focus on security within both Canada and the U.S., and a potential need for improved communications interoperability between Public Safety agencies on both sides of the Canadian/U.S. border. Therefore, NPSTC would like to recommend several key provisions for Industry Canada's consideration as it decides on the rules for 700 MHz in Canada.

1. Spectrum to Support both Narrowband and Wideband Requirements

NPSTC recommends that Industry Canada dedicate half of the spectrum for wideband and half for narrowband use. Narrowband spectrum is spectrally efficient for mission critical voice operations whereas wideband spectrum will support new high speed data and imaging technologies and applications. Specifically, NPSTC recommends that the 764-767/794-797 MHz band segment for narrowband use and the 767-770/797-800 MHz band segment for wideband use. This approach would be consistent with that used in the U.S.

2. Channelization

NPSTC recommends that Industry Canada adopt channelization that will support 12.5 kHz equipment with provisions allowing licensees to aggregate channels up to 25 kHz or split them to 6.25 kHz if needed. The rules FCC adopted for the U.S. several years ago specified channel centers every 6.25 kHz with provisions to aggregate channels for 12.5 kHz or 25 kHz operation. While the channels centers remain the same, the Commission recently modified its rules to extend the time for licensing, manufacture and marketing of 12.5 kHz efficiency equipment in the 700 MHz Public Safety band until December 31, 2014[1]. In addition, 12.5 kHz channels would be compatible with other provisions for interoperability using the Project 25 Phase 1 standard as addressed in section 3 below. Furthermore, the predominant direction for any improved efficiency beyond one voice path per 12.5 kHz channel for Public Safety is to develop 2-slot Time Division Multiple Access (TDMA) technology to reach an equivalent efficiency of one voice path per 6.25 kHz while maintaining the 12.5 kHz

[1] Fifth Memorandum Opinion and Order, Sixth Report and Order and Seventh Notice of Proposed Rulemaking, WT Docket No. 96-86, released January 7, 2005.

channel width. Public Safety representatives and Industry are currently partnering to develop such a 2 slot in 12.5 kHz standard (Project 25 Phase 2) in the Telecommunications Industry Association (TIA).

For wideband operation, NPSTC recommends that Industry Canada adopt a plan based on 50 kHz channels with provisions for licensees to aggregate multiple channels up to 150 kHz if needed for higher data rates. This is consistent with the 700 MHz wideband rules in the U.S. and is supported by a wideband interoperability standard (TIA-902) developed by the Public Safety representatives and TIA, and recently proposed for adoption by the FCC. [2]

3. Interoperability

Because modern equipment development is based on digital technologies, standards are essential for communications interoperability. For narrowband operation, the FCC established a subset of the channels as interoperability channels. In addition, the U.S. rules require that 700 MHz band public safety radios which operate on the narrowband channels all be capable of operation on the interoperability channels and be capable of operation in accordance with the ANSI 102 (Project 25 Phase 1) interoperability standard. The Project 25 Phase 1 standard was developed jointly by Public Safety representatives and industry. Multiple manufacturers offer products which meet the P25 Phase 1 interoperability standard. [3]

4. Technical provisions

The potential for Canadian Public Safety agencies to take advantage of equipment economies of scale in the 700 MHz band will also be dependent on the technical details ultimately adopted by Industry Canada. These technical details include the maximum equipment power levels allowed, the frequency stability required and the rules specifying the amount of energy a 700 MHz band radio may radiate into the adjacent channel. While NPSTC will not detail the specifications adopted by the U.S. here, we encourage Industry Canada to review the U.S. 700 MHz rules as a resource for adoption of the rules in Canada. In this regard, we note that some of these rules specifying emission limits were very recently changed in an FCC decision released January 7, 2005.

[2] Fifth Memorandum Opinion and Order, Sixth Report and Order and Seventh Notice of Proposed Rulemaking, WT Docket No. 96-86, released January 7, 2005, at para. 49 and 50.

[3] See www.tiaonline.org/standards/project_25/P25FAQ.pdf

5. Border Considerations

NPSTC believes that the block and zone framework used in the 800 MHz band has generally worked well to provide fair access to spectrum by both Canadian and U.S. entities along the border. Under this framework, Canadian licensees have a higher percentage of the channels in areas where Canada has a higher population, relative to that in the U.S. Similarly, U.S. licensees have access to a higher percentage of the channels in areas where the U.S. population is higher than that in nearby areas of Canada. NPSTC recommends continuing this approach for the 700 MHz band.

However, in defining rules for the 700 MHz band, we recommend that Industry Canada consider some possible modifications to the approach used at 800 MHz. At 800 MHz when the channels were distributed through border agreements, all channels were generally considered to be equivalent from a usability standpoint. At 700 MHz, however, pending clearing of all TV stations, the specific location of a channel within the band could impact its usability. For example, pending full TV clearing, Public Safety channels that fall near the picture or sound carrier of any co-channel TV stations may be more difficult to deploy, requiring greater spacing from TV to avoid interference. In the interest of fairness to both Canadian and U.S. Public Safety users, NPSTC recommends that Industry Canada and the FCC consider adopting some mechanism to spread the channels accessible by each country in the border area throughout the applicable narrowband or wideband segment. However, NPSTC is aware that interleaving Canadian and U.S. spectrum on a channel-by-channel basis may raise concerns about more complex border coordination. Therefore, NPSTC would be happy to engage in additional dialogue with Industry Canada and the FCC in an attempt to develop an approach that is fair and minimizes any administrative burden faced by Canadian and U.S. licensees as well as Industry Canada and the FCC.

III. Summary and Conclusion

NPSTC wishes to thank Industry Canada for allocating spectrum in the 700 MHz band to support Public Safety telecommunications needs. We believe Public safety users in both Canada and the U.S. would benefit significantly by having generally compatible rules across both countries. These benefits include the potential for equipment economies of scale, as well as improved interoperability when needed for communications among Public Safety agencies on both sides of the Canadian and U.S. border. NPSTC pledges its support to assist Industry Canada in defining rules and making the 700 MHz spectrum accessible by Public Safety agencies in Canada as soon as possible.