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1-888-902-5768
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Radio Advisory Board of Canada **Conseil consultatif canadien de la radio**

File: 2000

2006-04-19

Industry Canada
Director General Spectrum Policy
300 Slater Street,
Ottawa, ON
K1A 0C8

Dear Mr. Shaw;

Subject: **Canada Gazette Notice DGTP-004-05**
Proposals and Changes to the Spectrum in Certain Bands Below 1.7 GHz, Dated 2005-12-10

Please find attached the Radio Advisory Board of Canada's final response to Canada Gazette notice DGTP-004-05.

This response must be read in conjunction with the Board's provisional response which was sent on 2006-01-25.

This response was prepared in MS Word 2003 running under Windows XP.

It was balloted by Members; the results were:

- Approved: 8
- Approved (with comment): 2
- Abstain: 4
- Disapprove (with comment): 0
- Disapprove: 0

Radio Advisory Board of Canada **Conseil consultatif canadien de la radio**
116 Albert Street, Suite 811 ☎ Phone: **+ 613 230 3261**
Ottawa, ON ✉E-mail: **r.a.b.c@on.aibn.com**
K1P 5G3 🖷 Fax: **+ 613 230 3262**
💻Web site: **http://www.rabc.ottawa.on.ca/**

The following comments, which constitute part of this response, were received:

From CEA: The Canadian Electricity Association supports the Radio Advisory Board of Canada's suggestion that Industry Canada provide national interoperability channels for public safety, before addressing the introduction of Multi-use Radio Service in the 150 MHz band. Moreover, we would like to take this opportunity to emphasize that, owing to the critical infrastructure nature of our industry, utilities require preferred access to the spectrum to monitor and control the transmission grid securely and effectively. Electricity transmission and production have been classified as critical infrastructure by the Department of Public Safety and Emergency Preparedness. The provision of uninterrupted electricity is an essential service upon which the security and well-being of Canadians depends, a dependency made evident by the August 2003 blackout in Ontario and the Northeast & Midwest United States. A number of other public safety service providers are also dependent on our industry's reliable supply of power and neighboring electric utilities frequently turn to each other for support in emergency situations. At the same time, it has been shown that commercial service providers cannot be fully relied on to meet our industry's required reliability levels, during normal or emergency operations. Given that a highly reliable communications network is a condition for sound critical infrastructure management, the electricity industry needs to maintain elevated status as a spectrum user. As such, in addition to supporting the case for national public safety interoperability in the VHF and UHF ranges, we propose that Industry Canada recognize electric utilities under a new national service category, whose users have high priority access to mobile and fixed spectrum.

From DND: DND has been discussing with IC the issue of WMTS in the band 1395-1400 MHz for the past year. 1350-1400 MHz is a primary radiolocation band. A recently completed IC EMC study indicates that WMTS will suffer harmful interference near a number of important DND radar sites, unless the radar is shut down entirely (not an option!). Radar emission measurements will be completed at a couple of sites to validate the IC study. IC is presently developing Policy text describing the issue and the conditions (or avoidance) of WMTS use near certain radar sites for this band.

Yours truly

Original signed by

Paul Frew
President

Final Response to DGTP-004-05, Proposals and Changes to the Spectrum in Certain Bands Below 1.7 GHz, Dated 2005-12-10

General

The Board commends the Department for consulting on this important issue.

This final response must be read in conjunction with the RABC's provisional response dated 2006-01-25.

This response is in two parts:

1. MURS at 150 MHz; and

2. AMR at 1.4 GHz.

The Radio Advisory Board of Canada has no comments on other parts of the Gazette beyond those filed in its preliminary response.

Part 1
6. Multi-use Radios in the 150 MHz Band

The RABC appreciates and supports the Departments willingness to take on the task of clearing currently licensed frequencies/channels for new uses. However, the Board sees the following significantly higher priorities for clearing of a limited number of channels in the VHF and UHF bands:

1. National interoperability channels for public safety; and

2. National, licensed, low power frequencies for business use.

Providing common channels on a national basis in the VHF band primarily and the UHF band is one of the important pieces of solving the public safety interoperability puzzle. These channels should also be harmonized with the United States interoperability channels.

There is also a need for common, national, low power push-to-talk (PTT) frequencies for business use. Currently there is only 1 national channel and 2 regional channels. By comparison there are, depending on which ones are included, about 41 channels (commonly called "color dot" frequencies) in the United States. MURS channels were provided from these channels. National channels allow business users to have quick access to equipment and frequencies which are licensed and coordinated.

While we are not opposed to MURS being introduced into Canada we fail to see the demand. Canadians, due to decisions by Industry Canada, have access to a sufficient number of license exempt frequencies for short range PTT applications. These services, known as FRS and GMRS, have 30 channels in the 450 MHz band. While ideal for consumers it is only considered usable by business for a limited number of applications. This is due to the fact that they are shared, and more importantly, that there is no coordination of this service through licensing.

The RABC encourages Industry Canada to ensure that there are an adequate number of channels cleared and available for public safety interoperability and low power business use before addressing MURS. We do understand the potential for unauthorized MURS equipment being used in Canada and its impact. The Board would welcome the opportunity to provide additional input on the 2 priorities noted above.

Part 2
8. Realignment of Spectrum for Medical Telemetry, Utility Telemetry and Flexible Radio Applications

The RABC welcomes the proposals in section 8 of DGTP – 004-05 (the "consultation paper") and offers the following comments in response to the questions posed therein by the Department.

The Board notes that no representatives of medical telemetry interests (eg. hospitals or equipment manufacturers) have been part of RABC discussions on the policy proposals for 1.4 GHz. However, the RABC recognizes the need for access by Canadian hospitals and medical institutions to the latest medical telemetry equipment, and agrees that spectrum alignment in North America should be encouraged, to the extent practicable, to permit such access. Accordingly, the RABC supports the proposal to permit medical telemetry applications on a licence–exempt, no protection / non-interference basis, in the bands 1395 – 1400 and 1427.5 – 1429.5 MHz.

The RABC understands that the Department will be proposing technical parameters for medical telemetry applications in RSS-210 for these bands, and the RABC looks forward to reviewing them in due course. Such technical parameters should, of course, be consistent with the very limited range normally used by medical telemetry applications, and the no-protection / non-interference status of the new designations.

The RABC is generally in favour of the Department's spectrum policy proposals for utility telemetry applications in section 8.2 of the consultation paper. As you know, the Board responded on January 25, 2006 supporting the Department's proposal to designate the 1 MHz band 1429.5 -1430.5 to N-MCS for AMR applications pending the outcome of the overall alignment and harmonization of this spectrum. We present below our comments on the other elements of the policy and the specific questions posed at the end of section 8.2.1.

The Board supports the Department's intention generally to harmonize with the U.S. band plan in the 1427-1432 GHz band. To a considerable extent, there is a single North American market for the equipment and services used by water, gas and electric utilities to serve their large and various publics. As most utilities are regulated, controlling costs is of great importance to them, and access to affordable technologies is a key element in such cost savings. Spectrum harmonization of course plays a significant role in keeping equipment costs down, as do technical standards that are reasonable and justifiable. It is perhaps indicative of the more or less international nature of the utility market that Ontario's smart meter program has attracted suppliers from all over North America and abroad to provide metering equipment and a variety of energy solutions.

Accordingly, the Board is in favour of the proposed designation of the band 1429.5 to 1432 MHz, the top 2.5 MHz to N-MCS for AMR applications. N-MCS (narrowband multipoint communications systems) and AMR (automated meter reading) are the terms used in the consultation paper, and in the spectrum policy proposals for 1.4 GHz contained in the earlier policy document *SP1-3 GHz*. While AMR remains a common term in the lexicon of utility information management, it appears that N-MCS is no longer, if it ever was, a very useful term. Apart from its use in Industry Canada regulatory documents, it appears not to have any currency in utility literature, or in other jurisdictions. The Board suggests that the term "utility telemetry" be used consistently and in place of N-MCS.

The consultation paper invites comments on the potential wide range of telemetry applications that could be permitted, and the basis on which additional telemetry applications could be effectively introduced. While there has been relatively little use made of this band for utility telemetry operations since the issuance of *SP 1-3 GHz* in 1999, that is quickly changing. The RABC is aware of at least one location, Fort St. John, B.C., where spectrum is in short supply in this band, on account of extensive oil and gas exploration and pumping activities. The Board believes the term "utility telemetry" ought to be understood or defined narrowly so the band is not used for purposes for which it is not designated, and which might better be accommodated elsewhere. The Board understands the term "utility telemetry" to mean those operations for communicating data that are used by energy and water providers, such as gas, water, and electric utilities as well as pipeline operators. Examples of the data include critical infrastructure monitoring and control, energy usage, load control, metering of consumption data, and similar activities.

With respect to the basis upon which additional telemetry applications could be effectively introduced, the Board believes that Industry Canada should restrict this band's use solely to utility telemetry, and not open it to other kinds of telemetry use. Utilities (water, gas and electric distributors as well as the petroleum industry) have growing needs for wireless monitoring solutions, and the Board believes the relatively modest 2.5 MHz set aside in this band should not have to be shared with non-utility telemetry operations. More and more emphasis is being placed these days on energy and water conservation and on creating greater efficiencies. AMR technologies, often using wireless methods, are key elements in helping to reduce consumption and, ultimately, the need for

increased energy generation. As initiatives such as Ontario's smart meter program gather momentum, there will be more call for dedicated spectrum to permit the deployment of the utility telemetry systems required. As indicated above, there are a large number of discrete service areas within the broader category of utility telemetry, and the Board believes there are compelling reasons to limit use of this spectrum to utility telemetry. The utility industry works cooperatively on many areas of common concern and is well able to police itself in matters of spectrum management, and to design systems that can co-exist. Opening the band to general telemetry use has the potential to introduce many unknown technologies that could cause potential co-existence or interference issues.

The consultation paper appears to give AMR or utility telemetry a special status in the 1429.5 to 1430.5 MHz sub-band, which is not subject to the temporary moratorium imposed on licensing in the 1427-1430.5 MHz band for SRS, and on the 1427-1429.5 band for utility telemetry. Under the current spectrum policy in force, SRS systems have priority in rural areas, and utility telemetry systems have priority in urban areas. The procedure for determining the urban/rural demarcation is set out in Industry Canada document RIC-27. It is not clear from the consultation paper if utility telemetry is to have priority in rural and urban areas in the sub-band 1429.5 – 1430.5 MHz. This should be clarified. The Board did not have the benefit of participation from representatives of SRS equipment users or manufacturers and, hence, is not in a position to comment on the future spectrum needs of SRS. The Board has, previously, commented on problems with the urban/rural divide and it suggests that Industry Canada review RIC-27 and the urban/rural geographic sharing scheme on which it is based, with a view to seeing whether it might be dispensed with for the 1429.5 to 1432 MHz band.

The Board notes that in the *SP1-3 GHz* spectrum policy paper, the Department established channel bandwidths of 1 MHz which were appropriate given the state of AMR technology at the time. Since then, however, there have been substantial improvements in spectrum efficiency and much less than 1 MHz is needed to provide effective coverage of a reasonably-sized urban center. The consultation paper takes note of these improvements. The Board recommends that the Department bring forward at the earliest opportunity revised versions of SRSP-301.4 and RSS-142, which together set out the technical rules for AMR networks and apparatus that operate in the 1,4 GHz band. It would appear that 50 KHz channels may be the preferred channel size as service providers can then aggregate two or more channels to provide the level of service required. With a total of 2.5 MHz of spectrum, there should be adequate spectrum for several potential competitors in any given market, assuming the spectrum is restricted to legitimate utility telemetry applications. There appear to be some anomalies in the out-of-band emissions mask in RSS-142, and we understand the Department is looking into these with a view to harmonizing with the equivalent masks in other jurisdictions. The Board hopes revised versions of these technical papers will be issued soon, and it stands ready to provide its comments on them in a timely fashion.

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