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SP 1.7 GHz
Issue 1
June 2009

Spectrum Management and Telecommunications

Spectrum Utilization Policy

Spectrum Allocation and Utilization Policy Regarding the Use of Certain Frequency Bands Below 1.7 GHz for a Range of Radio Applications

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1. Intent

The purpose of this spectrum utilization policy, announced in *Canada Gazette* Notice DGTP-006-09, is to establish the requirements for the use of designated spectrum in certain frequency bands below 1.7 GHz for a range of radio applications, such as multi-use radio service (MURS), mobile and fixed wireless access applications, medical telemetry and utility telemetry.

SP-1.7 GHz will, in accordance with the *Spectrum Policy Framework for Canada*, maximize the economic and social benefits that Canadians derive from the use of the radio frequency spectrum by ensuring that market forces are relied upon to the maximum extent feasible and that the spectrum is made available for a range of services that are in the public interest.

2. Background

In December 2005, Industry Canada released a spectrum policy proposal paper, *Proposals and Changes to the Spectrum in Certain Bands Below 1.7 GHz* (*Canada Gazette* Notice No. DGTP-004-05) that sought comments on the policy, technical and licensing considerations for the implementation of a range of radio applications.

2.1 Consultation Summary

The public consultation elicited a wide range of responses from public safety agencies, industry associations, manufacturing, government and private sector communities. In general, broad support was expressed for the Department's proposals. Specific comments are addressed on a band-by-band basis in the following sections.

3. Spectrum Allocation and Utilization

The Department establishes allocation and spectrum utilization provisions for the frequency bands listed herein.

3.1 Allocation Changes

3.1.1 Bands 216-220 MHz and 220-225 MHz

In the public consultation, the Department proposed provisional changes to the *Canadian Table of Frequency Allocations* in the bands 216-220 MHz and 220-225 MHz. As a result, the following allocation decisions for both bands and the spectrum utilization policy for 220-225 MHz were implemented in January 2006:

Decision:

- The mobile and fixed services are allocated on a shared primary basis.
- Canadian footnote C11 permits operation of the amateur service, in the frequency sub-band

219-220 MHz, on a secondary basis. Amateur use of the sub-band 220-222 MHz is permitted by the Department under exceptional circumstances, such as assisting in community disaster relief efforts.

- Appropriate revisions will be made to the *Canadian Table of Frequency Allocations* to implement the following changes:

Canadian Table of Frequency Allocations

MHz

216-220	FIXED LAND MOBILE 5.242 MARITIME MOBILE Amateur C11
220-222	FIXED MOBILE Amateur C11
222-225	AMATEUR

C11 - In the band 219-220 MHz, amateur service is permitted on a secondary basis. In the band 220-222 MHz, amateur service may be permitted in exceptional circumstances on a secondary basis to assist in disaster relief efforts.

5.242 Additional allocation: in Canada, the band 216-220 MHz is also allocated to the land mobile service on a primary basis.

3.1.2 Band 944-952 MHz

To respond to recent interest in extending the band 953-960 MHz for developing broadband wireless access and subscriber radio services in remote rural and northern areas, Industry Canada proposed elevating the status of the fixed radio service in the band 944-952 MHz to make the fixed and mobile radio services co-primary across the entire range. The Department received no comments opposing the elevation of the fixed service to primary status.

Decision:

The fixed service is elevated to primary status in the band 944-952 MHz, and appropriate revisions will be made to the *Canadian Table of Frequency Allocations* to implement the following changes:

Canadian Table of Frequency Allocations

MHz

944-952	MOBILE 5.317A C7 FIXED
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5.317A Those parts of the band 698-960 MHz in Region 2 and the band 790-960 MHz in Regions 1 and 3 which are allocated to the mobile service on a primary basis are identified for use by administrations wishing to implement International Mobile Telecommunications (IMT). See Resolutions **224 (Rev. WRC-07)** and **749 (WRC-07)**. This identification does not preclude the use of these bands by any application of the services to which they are allocated and does not establish priority in the Radio Regulations. **(WRC-07)**

C7 **(CAN-09)** International Footnote **5.317A** provides administrations with the flexibility to implement International Mobile Telecommunications (IMT) in parts of the band 806-960 MHz that are allocated to the mobile service on a primary basis. For the time being, the application of **5.317A** is limited to the bands designated for cellular mobile telephony and trunked mobile systems. The bands 824-849 MHz and 869-894 MHz are designated for cellular telephony services and the bands 806-821 MHz, 851-866 MHz, 896-902 MHz and 935-941 MHz are designated for trunked mobile services and, as such, can evolve to accommodate IMT service capabilities.

3.2 Spectrum Utilization

Industry Canada establishes a spectrum utilization policy for the frequency bands outlined herein.

3.2.1 Band 216-220 MHz

The Department invited comments on the types of new radio applications that could be accommodated in the band 216-220 MHz, as well as the potential frequency band plan, technical standards and other criteria that could be considered, including whether new radio applications should be similar to those in the United States.

The comments received supported flexibility in the types of technologies and applications to be permitted in the band. A channel plan was suggested to allow the use of equipment that is readily available in the existing radio equipment market. There was support for a first-come, first-served (FCFS) licensing process that could accommodate the growth of systems in the lower 139-174 MHz band for mobile trunked radio. Some comments suggested specific sub-band plans and that radio applications be aligned with those in the United States.

Decision:

As proposed in the December 2005 consultation, the designation of spectrum for Interactive Video and Data Services (IVDS)¹ applications in the sub-band 218-219 MHz is removed.

In the band 216-220 MHz, the Department will permit:

- (i) land mobile applications throughout the band;
- (ii) the deployment of a flexible range of radio systems and services;
- (iii) licence-exempt auditory assistance devices in the sub-band 216-220 MHz, on a no protection from interference basis; and
- (iv) amateur service operation in the sub-band 219-220 MHz, on a secondary basis.

3.2.1.1 Planning and Licensing for the Band 216-220 MHz

With these allocation changes in place, the Department is of the view that it is time to begin the next phase of planning and deployment for this band and that there may be opportunities to better plan the band deployment and further align its use within a North American context. For example, in the United States, the auctioning of the sub-bands 217-220 MHz for Automated Maritime Telecommunications System (AMTS)² and the sub-band 218-219 MHz for IVDS has been completed. Although the Department has previously noted that there has been little interest expressed in AMTS or IVDS in Canada, a spectrum auction may be suitable to determine the interest for deploying new radio applications in certain parts of the band 216-220 MHz.

In this context, the Department intends to auction the band 216-220 MHz. Policy, technical and operational requirements will need to be established, including protection requirements for adjacent broadcasting services and incumbent maritime use.

¹ The U.S. Federal Communications Commission (FCC) classifies IVDS as a point-to-multipoint, multipoint-to-point, short distance communication service. An IVDS licensee may transmit information, product and service offerings to its subscribers and receive interactive responses. Potential applications include ordering goods or services offered by television services, viewer polling, remote meter reading, vending inventory control and cable television theft deterrence. Mobile operation is permitted. An IVDS licensee can develop other applications consistent with the rules without the FCC's approval. An IVDS channel, however, is insufficient for the transmission of conventional full motion video.

² The FCC classifies AMTS as a specialized system of coast stations providing integrated and interconnected marine voice and data communications, somewhat like a cellular phone system, for tugs, barges and other vessels on waterways. Service to units on land is permitted, so long as marine-originating communications receive priority.

3.2.2 Band 220-222 MHz

In the consultation, the Department proposed that this band accommodate a wide range of users and be assigned using an FCFS licensing process, as this authorization process was deemed most suitable for efficient deployment of the frequency band. Therefore, the following decision and its provisions were implemented in January 2006, to accommodate a range of mobile and fixed service applications in order to meet the radiocommunication needs of several user groups.

Decision:

In the band 220-222 MHz:

- (i) flexibility will be afforded to encourage users to deploy various technologies and services;
- (ii) applicants for spectrum will be accommodated using an FCFS licensing process; and
- (iii) in ongoing discussions with industry to develop the relevant Standard Radio Systems Plan (SRSP), some channels will be earmarked for a particular use, such as public safety, railway operation and utility telemetry.

3.2.3 MURS in the 150 MHz Band

In its consultation, the Department proposed to designate five frequencies, after a five-year transition period, in the 150 MHz band for use by MURS devices. The frequencies were 151.820 MHz, 151.880 MHz, 151.940 MHz, 154.570 MHz and 154.600 MHz.

The Department also noted that MURS devices posed some potential for intermittent disruption to existing users on these channels and on some adjacent channels. However, historically, this has always been the case with the 150 MHz band, which has always been licensed on a shared basis to many private, commercial and public safety users. Therefore, all users have had to co-exist for many years with the realization that the spectrum is shared among many users.

In general, Canadians expect to have access to the same range of electronic and wireless products and services that are available elsewhere in North America. However, making these frequencies available for these wireless consumer products often poses several challenges. One of the primary challenges is that the desired spectrum is often already in use. This means that incumbent licensees need a reasonable notification period to move to other frequencies to avoid interference to their radio services.

There were several public comments received from fire departments, their associations and the municipalities in which they operate. The comments voiced concerns about the potential for interference from MURS devices to their operations and their desire for exclusive public safety spectrum. Industry Canada has met several times with senior representatives from the Canadian Association of Fire Chiefs (CAFC). Through this ongoing dialogue, a better understanding of the implementation and timing of this policy has been achieved.

Decision:

The Department establishes the following spectrum utilization policy to permit the operation of MURS devices, on a licence-exempt basis, and to enable current licensees to eventually migrate to other channels should they so desire.

The Department designates the following channel limits for the use of MURS devices:

151.81438 – 151.82569 MHz
151.87438 – 151.88563 MHz
151.93438 – 151.94563 MHz
154.56000 – 154.58000 MHz
154.59000 – 154.61000 MHz

In addition, a moratorium on any further licensing of these channels to new land mobile systems is now in effect.

The Department establishes the following time frame to permit MURS devices to operate in these five channels in the 150 MHz band.

- (i) a five-year transition period is established from the publication date of this spectrum policy, after which the distribution and sale of MURS devices will be permitted;
- (ii) all affected licensees will receive notification letters following the publication date of this spectrum policy and two years before the end of the transition period;
- (iii) affected licensees that wish to move to other frequencies, at their own cost, will be accommodated with new frequencies where possible. The Department will inform licensees of the availability of alternate frequencies, on a case-by-case basis, at the request of the licensee;
- (iv) licensees may continue to use these frequencies on a secondary, no protection basis, but may be subject to interference from the operation of MURS devices; and
- (v) the Department will establish appropriate technical limits for the MURS devices in a relevant Radio Standard Specification (RSS) and/or a Standard Radio System Plan (SRSP). The provisions of paragraph (iii) and (iv) will also be applied to certain adjacent frequencies, as listed in the relevant SRSP.

3.2.4 Mobile and Fixed Services in the 900 MHz Range

The Department invited comments on what band plan and technical standards should be established to efficiently use the bands 896-901 MHz and 935-940 MHz and how best to align these bands with those in the United States in order to bring about efficient use for the sharing of spectrum along the border. The comments encouraged band extension resulting in the new extended paired bands 896-902 MHz and 935-941 MHz. New applications, existing band plans, greater spectrum efficiency, as well specific use for trunked radio and integrated digital enhanced network applications, were supported.

Decision:

The Department will:

- (i) add the bands 901-902 MHz and 940-941 MHz as extensions to the trunked mobile bands 896-901 MHz and 935-940 MHz (the new paired bands will be 896-902 MHz and 935-941 MHz);
- (ii) continue with the existing designation of trunked mobile with some flexibility of certain mobile and fixed applications to encourage new applications;
- (iii) no longer permit narrow-band personal communications systems (PCS) in the asymmetric band pairs 930.225 MHz/901.70625 MHz, 930.275 MHz/901.71875 MHz, 930.325 MHz/901.73125 MHz, 930.375 MHz/901.74375 MHz; and
- (iv) permit existing narrow-band PCS operation to continue in the 50 kHz paired bands at 901.525 MHz/940.525 MHz, 901.575 MHz/940.575 MHz, 901.625 MHz/940.625 MHz, and 901.675 MHz/940.675 MHz.

Reference Table

Band (MHz)	Utilization
896-902/935-941	Trunked Mobile
901.525/940.525 901.575/940.575 901.625/940.625 901.675/940.675	Narrow-Band PCS

3.2.5 Band 944-952 MHz

The Department invited comments on the proposal to open the band 944-952 MHz, to extend the band 953-960 MHz, for wireless access in remote rural and northern areas of Canada. The Department received no comments on this proposal.

Decision:

As no comments came forward regarding the proposal for wireless access applications in this band, the Department believes that it would be more appropriate to undertake a future consultation on potential new uses for this band when new applications emerge on the communications horizon.

3.2.6 Medical Telemetry, Utility Telemetry and Flexible Radio Applications

3.2.6.1 Medical Telemetry in the Bands 1395-1400 MHz and 1427-1429.5 MHz

Industry Canada invited comments on designating the bands 1395-1400 MHz and 1427-1429.5 MHz for medical telemetry. The Department received no comments to the contrary during its study of these frequency bands. However, the Department has determined that, in Sydney, Nova Scotia, and Gander, Newfoundland and Labrador, high power level emissions from government radar operations currently prevent the possibility of medical telemetry equipment being used in the bands 1395-1400 MHz and 1427-1429.5 MHz.

In the consultation, the Department noted that subscriber radio systems (SRS) operate in the band 1427-1452 MHz. As the medical telemetry frequency band 1427-1429.5 MHz overlaps the lower portion of the SRS band, the Department will no longer licence new SRS systems in the band 1427-1429.5 MHz.

Decision:

In this regard, the Department will:

- (i) advise Health Canada, so that affected hospitals will be informed that the use of the bands 1395-1400 MHz and 1427-1429.5 MHz should be avoided in Sydney, Nova Scotia, and Gander, Newfoundland and Labrador;
- (ii) encourage hospitals in these cities to use only the band 608-614 MHz for medical telemetry equipment until further notice;
- (iii) require manufacturers to provide clear notice of this information in their medical equipment literature as a prerequisite to equipment certification;
- (iv) permit medical telemetry applications in the bands 1395-1400 MHz and 1427-1429.5 MHz, on a licence-exempt basis, for all other cities in Canada in accordance with technical parameters to be established in RSS-210; and
- (vi) grandfather existing SRS systems.

3.2.6.2 Utility Telemetry Applications in the Band 1429.5-1430.5 MHz

The Department invited comments on a proposed realignment of some spectrum to provisionally accommodate the operation of utility telemetry. The resulting decision and its provisions took effect in January 2006.

Decision:

The Department has added a designation to Narrowband Multipoint Communication Systems (N-MCS),³ including Automated Meter Reading and Automated Meter Infrastructure (AMR/AMI) in the band 1429.5-1430.5 MHz and has accordingly:

- (i) placed a moratorium on the authorization of SRS operations in the band 1427-1430.5 MHz (Channel S1) and on the authorization of utility telemetry operations in the band 1427-1429.5 MHz;
- (ii) designated the band 1429.5-1430.5 MHz to N-MCS for AMR/AMI applications to be licensed on an FCFS basis in urban areas. Should the number of applications received exceed the available spectrum in one or more areas, the Department will consider initiating a competitive licensing process after consulting with applicants; and
- (iii) grandfathered existing SRS systems.

3.2.6.3 Additional Spectrum for Telemetry Applications in the band 1430.5-1432 MHz

In addition to the proposals in 3.2.6.1, Industry Canada invited comments on a proposal to further designate the band 1429.5-1432 MHz for utility telemetry applications. Respondents noted the increasing demand for spectrum for utility telemetry systems and the potential for AMR/AMI systems to aid in energy conservation efforts. Some respondents, while not opposing this proposal, noted the continuing importance of SRS in providing basic telephone service to Canadians living in rural and remote areas and urged that protection be provided to existing SRS.

Decision:

The remainder of the band 1429.5-1432 MHz is now also designated for a wide range of utility telemetry applications, including AMR/AMI. Furthermore, in the band segment 1430.5-1432 MHz, priority will continue to be given to N-MCS for AMR/AMI applications in urban areas and their vicinities. As this band segment also overlaps SRS channel S2 outside of urban areas, existing SRS systems in rural areas will be grandfathered.

3.2.7 Band 1390-1400 MHz

In the consultation, the Department proposed that the application of domestic footnote C5 to the band 1390-1400 MHz be suppressed to allow the use of fixed and mobile services for commercial purposes. In addition, it proposed that domestic footnote C27 be modified by removing the band 1390-1400 MHz to reflect the above-mentioned proposed allocation change and that priority for radiolocation remain in the band 1370-1390 MHz. The Department also proposed that domestic footnote C27B be added to

³ See SP 1-3 GHz, *Amendments to the Microwave Spectrum Utilization Policies in the 1-3 GHz Frequency Range* (<http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf01918.html>).

grandfather the current radiolocation systems in the band 1390-1400 MHz licensed prior to October 1, 2005.

- **SUP C5** For the exclusive use of the Government of Canada.
- **C27** In the band 1370-1390 MHz, high-power stations of the radiolocation service have priority over the fixed and mobile services.
- **C27B** Existing radiolocation systems licensed prior to October 1, 2005 in the band 1390-1400 MHz, may continue to operate.

Decision:

These allocation and footnote changes will be reflected in the next edition of the *Canadian Table of Frequency Allocations*.

3.2.7.1 Bands 1390-1395 MHz and 1432-1435 MHz

The Department invited comments on a proposed realignment of some spectrum to accommodate the operation of a range of flexible radio applications. Several comments were received in support of this proposal, although none of the comments addressed the issue of the timing of a consultation on the licensing mechanism.

Decision:

In the bands 1390-1395 MHz and 1432-1435 MHz:

- flexible applications in the fixed and mobile services will be permitted;
- existing SRS stations operating in rural areas will be grandfathered;
- appropriate technical limits for systems in these bands will be established in an RSS and/or an SRSP; and
- the licensing mechanism to release this spectrum will be the subject of a future consultation.

3.2.7.2 Band 1492-1504 MHz

In the consultation, the Department proposed that the designation:

- for telemetry in the band 1493.5-1496.5 MHz be expanded to the entire band 1492-1504 MHz, with the exception of the Windsor, Ontario to Montréal, Quebec corridor, to accommodate a range of flexible fixed and mobile service use to support utility telemetry applications; and

- (ii) for SRS in the band 1492-1504 MHz be expanded to allow implementation of wireless access applications and to support Time Division Duplex (TDD).

Decision:

The Department is planning to undertake a public consultation on the use of L-Band spectrum (1435-1525 MHz). As this consultation will also address the frequency bands 1492-1504 MHz, the Department will defer any final decision pending the results of this further consultation. Comments already received in response to DGTP-004-05 will be further considered in this context.

3.2.7.3 Spectrum Policy for Flexible Uses of the Band 1670-1675 MHz

In the consultation, the Department proposed that the band 1670-1675 MHz be designated for fixed and mobile applications (except aeronautical mobile).

Decision:

This band is part of the Advanced Wireless Services spectrum that was auctioned in May 2008. Related information may be viewed on the Department's website at http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/h_sf08891.html.

4. Implementation

Parties interested in the implementation of this spectrum utilization policy should contact their local Industry Canada office.

Issued under the authority
of the Radiocommunication Act

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