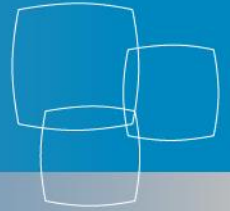




Industry
Canada

Industrie
Canada

Spectrum Rules and Antenna Sharing: An Update



**BC Broadband
Conference 2009**

**Angela Choi
Pacific Region**



Canada 



Agenda

- **Update on Spectrum Rules**
 - 3650 – 3600 MHz
 - 2500 – 2690 MHz
 - 700 MHz
 - 5150 – 5350 and 5470 – 5825 MHz
- **Update on the antenna procedure**
 - Tower sharing





Update on Spectrum Rules 3650 – 3700 MHz





Wireless Broadband Services (WBS) in 3650 – 3700 MHz

- **Industry Canada documents:**
 - DGTP-005-09 and Spectrum Policy SP 3650 MHz (June 2009).
- **Fixed and mobile operation allowed**
 - Point-to-point, point-to-multipoint, and point-to-area
 - no low data rate radio telemetry systems with less than 25 kHz bandwidth.
 - Technical standards currently in draft, will be harmonized with the FCC standards.





3650 – 3700 MHz Licensing

Licensing Procedure currently in draft:

- Spectrum licences with annual renewals
- Tier 4 service areas, full 50 MHz block.
- First-come-first-served (FCFS), non-exclusive and using contention-based protocol. All licensees have equal access to the spectrum.
- Annual licence fees to be established in accordance with the User Fees Act.
- Licensees will be required to submit site specific data.





3650 – 3700 MHz Interference Management

- The Department will not be involved in coordinating station assignments or resolving interference.
- Licensees are required to:
 - provide site specific info and contact info on a publicly accessible database prior to deploying equipment (also see CPC-2-1-23);
 - Co-ordinate amongst themselves; and
 - notify Fixed Satellite Service (FSS) operators when deploying a base station within 25 km of a licensed FSS earth station in the 3700 - 4200 MHz band.





3650 – 3700 MHz International Co-ordination

- **Currently no formal arrangement between Canada and U.S.**
 - Licensees will be subject to any future agreements that will be established.
- **Interim rules:**
 - if a fixed station's antenna looks within a 200° sector towards the border, the station must be located at least 56 km away from the border;
 - if the antenna looks within the other 160° sector away from the border, the station must be located at least 8 km away from the border.





Spectrum Direct and WBS

Français	Home	Contact Us	Help	Search	canada.gc.ca
--------------------------	----------------------	----------------------------	----------------------	------------------------	------------------------------

Industry Canada > Radio, Spectrum and Telecommunications > Spectrum Direct > Wireless Broadband Services

Industry Canada	Spectrum Direct
Programs and Services	
Spectrum Direct	Wireless Broadband Services
Home	To access the protected areas of the Spectrum Direct site (🔒), you will need to create a Web Profile to obtain a user name and password. If you have forgotten your password, please contact the nearest Regional Office . You can access the public areas of our site from the main menu .
On this page	
Account Information	<ul style="list-style-type: none">• Submit Station Data for Wireless Broadband Service in 3650-3700 MHz 🔒• Browse your uploaded stations 🔒• Wireless Broadband Service Data Requirements and XML Schema• Wireless Broadband Services in 3650-3700 MHz - Station Browser
Licence Applications	
Broadcasting Certificate Applications	Companies operating WBS are required to provide Industry Canada with information on radiocommunication stations covered by their spectrum licence as soon as a station is in operation. Those companies must use these tools to upload this information and view their station data. Refer to "Wireless Broadband Service Data Requirements and XML Schema" for a detailed description and examples of the information that must be submitted and for assistance in developing related procedures.
Radio Frequency Search	
Invoices	
Web Profile	
PCS/Cellular Station Information	
Wireless Broadband Services	





Update on Spectrum Rules 2500 – 2690 MHz





Broadband Radio Service (BRS) in 2500 – 2690 MHz

- **Existing MCS and MDS licences will expire respectively on March 31 and August 31, 2011.**
- **Consultation started in March, 2009, on:**
 - the evolution paths of the existing fixed-only services (MCS and MDS) to the future flexible BRS which can include both fixed and mobile services.
 - whether IC should renew the existing licences and continue to allow voluntary conversion, or IC should adopt a firm transition date and related transition policies.
- **Consultation closed in June. Comments and reply comments now posted on IC website**





2500 – 2690 MHz Cont.

- **Moratorium on new applications for Broadcasting Certificates for MDS.**
- **Additional consultations will be on:**
 - policy framework
 - licensing framework
 - band plan and relevant technical issues
 - Licence fees





Update on Spectrum Rules 700 MHz





Remote Rural Broadband Systems (RRBS) in 700 MHz

- **Industry Canada accepting applications the publication of RP-06, Issue 1, June 2006.**
 - GL-05 Interim Technical Guidelines covering operation within TV channels 21 to 51 (512 to 698 MHz).
 - CPC-2-1-24 Licensing Procedure (corresponding to GL-05).
 - Mapping tool/info on SpectrumGeo website.
 - RSS and SRSP currently being developed in consultation with the RABC.
 - Equipment availability issue





700 MHz Cont.

- Canada's current target DTV transition date is August 31, 2011.
- FCC 08-260 Second Report and Order, November 14, 2008 allows for expanded use of TV channels for broadband access in the U.S.





Update on Spectrum Rules 5150-5350 and 5470-5825 MHz bands





Licence-Exempt Local Area Network (LE-LAN) Devices in 5150-5350 and 5470-5825 MHz bands

- **Technical requirements in RSS-210, Annex 9.**
- **5150-5250 MHz**
 - restricted to indoor operation only.
- **5250-5350 and 5470-5725 MHz :**
 - Bands are also allocated to radiolocation service (including weather radars).
 - LE-LAN devices are currently prohibited from using 5600 – 5650 MHz (transmitters must notch out this frequency range - - Annex A9.4) to prevent interference to Environment Canada's weather radar network.





LE-LAN and Interference Issues

- **Dynamic Frequency Selection (DFS)**
 - has been proposed as a mechanism to prevent interference to other systems
- **In Europe,**
 - interference cases in 13 countries of RLAN (LE-LAN) devices interfering with weather radars in 5600-5650 MHz.
- **In the U.S.,**
 - NTIA is currently assessing the impact of LE-LAN devices employing DFS on government systems at 5.6 GHz.





Update on the Antenna Procedure





Legislative Responsibility regarding Antenna Supporting Structures

- **Industry Canada**

- Is responsible for the Radiocommunication Act.
- Has exclusive Federal jurisdiction over radiocommunication in Canada, including the authority to issue radio authorizations and approve the location antenna sites.





Consulting with Land-use Authorities

- **Industry Canada believes it is important that antenna systems be deployed in a manner that considers local surroundings.**
 - In 1990 issued Gazette Notice SMRR-002-90 advising that land-use factors would be included in spectrum management.
- **Client Procedure Circular (CPC) 2-0-03**
 - Describes the antenna siting and approval procedure.





Radiocommunication and Broadcasting Antenna Systems

CPC 2-0-03, issue 4 has been in effect since January 1, 2008.

All proponents must:

1. **Investigate sharing or using existing infrastructure before proposing new antenna supporting structures;**
2. Contact the land use authority (LUA) to determine local requirements regarding antenna systems*;
3. Undertake LUA and Public Consultations as required; address relevant concerns*; and
4. Satisfy IC's general and technical requirements.

* Unless excluded by the document





Two Ways Proponents are Encouraged to Share Infrastructure.

1. **Within the CPC there is strong encouragement for all licensees to share existing infrastructure.**
2. **'Radiocommunication Carriers' by condition of licence are required to allow other licensed Carriers use their existing infrastructure when it is technically feasible.**





Towers & Sharing CPC 2-0-03

Before proposing a new structure proponents are to:

- **Consider sharing an existing system, modifying, or replacing if necessary**
- **Locate, analyse and attempt to use any feasible other existing infrastructure (roof-tops, water towers)**
- **Proponents must not build new where reasonable options exist unless a new structure is preferred by the LUA**





Mandatory Roaming & Sharing For Licensed Carriers

- **November 29, 2008, CPC-2-0-17 “Conditions of Licence for Mandatory and Antenna Tower and Site Sharing and to Prohibit Exclusive Site Arrangements” came into effect.**
 - Applies to all licensed radiocommunication carriers under the Radiocommunication Act.
 - *A radiocommunication licensee is a *radiocommunication carrier* if its radio system is an interconnected radio-based transmission facility. This means that any radio apparatus in the facility may be used for the transmission or reception of intelligence to or from anywhere on a public switched network (PSN).





Mandatory Roaming & Sharing For Licensed Carriers (con't)

- **Technical feasibility disputes at impasse – Industry Canada decides validity of the positions.**
- **Other commercial issues at impasse, such as appropriate lease value – can go to an Arbitration Tribunal. The Tribunal is only available for monetary issues, not technical, see CPC 2-0-18 for details.**





Summary

- **All radio users are strongly encouraged to share.**
- **If negotiation fails, licensed Radiocommunication Carriers licensed by IC may require other licensed carriers to share at arbitrated rates where technically feasible.**
- **Compared to building a tower, sharing is generally less expensive, and allows quicker deployment.**





**For further information, visit:
www.ic.gc.ca/spectrum**



Canada 