RAC WCC Conference Call

RIGHT TRACK

Railway Association of Canada

Agenda

- Brief Introduction
  - Roles and Responsibilities
  - Spectrum Managed by RAC
  - Spectrum Policies
- Spectrum-E Discussion
  - Enhancements/Bug List Tracking Log
- 900 MHz Re-Banding in United States
- Next Meeting

Roles and Responsibilities

RAC

- Manage Spectrum by Assigning Frequencies in Railway Band only using Industry standard practices
- Keep Track of Radio Transmitters using Spectrum-E Management Tool in Compliance with Government requirements
- Create Policies for using Spectrum ***with consent of Railroads***, not unilaterally
- Perform International Co-ordination with the AAR
- Represent all Railroads whether member of RAC or not
- Industrial Liason with ISED in pursuing additional spectrum
    - 220 MHz Cross Border Agreement

Roles and Responsibilities

Railroads

- Must enter Radio Parameters into Spectrum-E as per CIRCULAR-NO-O-10_EN
  - For a New Site
  - For a modification to a site (ex. change in antenna height, increase in Power, site move > 100 feet, modulation change, etc.)
  - Cannot turn a transmitter on without an Authorization
- Follow Policies Agreed Upon by RAC WCC
  - New channels deployed as Narrow Band
  - Extensions of existing Wide Band networks can remain as Wide Band
  - NXDN is the Railroad very narrow band standard protocol to be used

Railroad Frequencies

- Listed on Spectrum Licence issued by ISED
- Frequency Assignments generally follow Canadian Railroads Frequency Assignment Plan document date July 28, 1960
- Channels in Border area are subject to concurrence with the US
  - AAR provides coordination for frequencies in the US
  - American primary channels are even numbers in AAR Channel plan
  - Canadian Primary and American Primary channels were 15 kHz apart
  - New Sharing agreement for 7.5 kHz channel plan

THIS LICENCE AUTHORIZES THE OPERATION OF THE SPECIFIED RADIO FREQUENCIES IN THE SERVICE AREA LISTED BELOW

LICENCE CONDITIONS

Appendix B4 - Railway Association of Canada

The following licence conditions apply to Railway Association of Canada Spectrum Licences. Please see the complete text of this appendix and take note of any restrictions or limitations imposed.

A copy of Appendix B4 can be viewed at: http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf10979.html. You can also navigate to Appendix B4 on our website: www.ic.gc.ca/spectrum-lic-cond.

SERVICE AREA
Canada

SERVICE AREA ID
RAC-ACFC-001

FREQUENCIES				SPECTRUM	CONDITIONS
FROM	TO	UPPER RANGE FROM	UPPER RANGE TO		
902.0000 MHz	928.0000 MHz			26.000 MHz	AS PER RSS 137|SELON CNR 137
160.1700 MHz	161.5800 MHz			1 410.000 kHz	AS PER SRSP 500|SELON PNRH 500
457.8875 MHz	457.9625 MHz	452.8875 MHz	452.9625 MHz	150.000 kHz	AS PER SRSP 501|SELON PNRH 501
857.5250 MHz	857.5500 MHz	812.5250 MHz	812.5500 MHz	50.000 kHz	AS PER SRSP 502|SELON PNRH 502
859.2500 MHz	859.2750 MHz	814.2500 MHz	814.2750 MHz	50.000 kHz	AS PER SRSP 502|SELON PNRH 502
857.7750 MHz	857.8000 MHz	812.7750 MHz	812.8000 MHz	50.000 kHz	AS PER SRSP 502|SELON PNRH 502
897.9750 MHz	898.0000 MHz	936.9750 MHz	937.0000 MHz	50.000 kHz	AS PER SRSP 506|SELON PNRH 506
897.9250 MHz	897.9500 MHz	936.9250 MHz	936.9500 MHz	50.000 kHz	AS PER SRSP 506|SELON PNRH 506

Cette licence est disponible en français.

Date Generated: 2020-09-02

Canada

SPECTRUM LICENCE

Issued under the authority of the Minister of Industry in accordance with the *Radiocommunication Act* and regulations made thereunder.

This licence may be amended by the Minister. For the latest version and status of this licence, please consult the Innovation, Science and Economic Development Canada website at http://www.ic.gc.ca/spectrum

EFFECTIVE DATE	EXPIRY DATE	LICENCE NUMBER	ACCOUNT NUMBER
April 1, 2020	March 31, 2021	010309841-005	100000000245

FREQUENCIES				SPECTRUM	CONDITIONS
LOWER RANGE FROM	LOWER RANGE TO	UPPER RANGE FROM	UPPER RANGE TO		
897.8750 MHz	897.9000 MHz	936.8750 MHz	936.9000 MHz	50.000 kHz	AS PER SRSP 506|SELON PNRH 506
896.9750 MHz	897.0000 MHz	935.9750 MHz	936.0000 MHz	50.000 kHz	AS PER SRSP 506|SELON PNRH 506
896.8750 MHz	896.9000 MHz	935.8750 MHz	935.9000 MHz	50.000 kHz	AS PER SRSP 506|SELON PNRH 506
896.9250 MHz	896.9500 MHz	935.9250 MHz	935.9500 MHz	50.000 kHz	AS PER SRSP 506|SELON PNRH 506

Spectrum-E

- Tool used to manage Railroad License (one license for all radios) and frequency assignments
  - https://spectrum.center/se/login
- It is a Hosted Application accessible via the internet using a Browser
  - No need to install software on Computer to use the program
- Spectrum-E exports are to be used to Populate ISED SPECTRA management to fulfill license obligations
- All members can have access to the system
  - Users only able to view Authorized records or create Requests

900 MHz Re-Banding

- 6 ATCS Channels in the United States will be exchange for 10 contiguous channels in the A Block
- The Ruling is expected to become effective September
- FCC has given the American Railways 5 years to vacate the 6 existing channels
- Canadian Government is asking whether Canadian Railroads would want to align themselves with these changes
- Without this alignment, border area will become an issue

900 MHz Re-Banding Options

- In the future there will be limited demand for this equipment
  - May force vendor to end support
- Present ATCS equipment can be re-programmed for the new channels for limited cost
- American Railroads mostly moving off 900 to 220 for CTC
  - Presently 220 frequencies have to be licensed from ISED
- 10 contiguous channels equate to 2 X 125 KHz channels which can be consolidated for higher throughput radio

PBSN Update

- RAC made final comments in July 15 to CRTC for final ruling
  - Goal was to allow Critical Infrastructure companies to get their own *Mobile Network Code* for the purpose of operating an LTE network
  - Using Shared RAN concept to allow Public Safety and Railroads to share radio spectrum
- Awaiting the final decision from the CRTC

220 MHz Sharing Agreement

- Modification to the sharing agreement to allow for PTC use in border area finalized 2015
- Changes to the operation of PTC require a further modification of the Sharing Agreement to enable new feature
  - Common Channel Redundancy
- Frequencies are split evenly between Canada and US in border area
  - Non-US primary channels limited in power at border

Future Call

- Metrolinx NXDN System Presentation