PUBLIC NOTICE

Federal Communications Commission
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December 5, 2014

PUBLIC SAFETY AND HOMELAND SECURITY BUREAU ANNOUNCES REGION 19 (NEW ENGLAND) 700 MHZ AND 800 MHZ PUBLIC SAFETY REGIONAL PLANNING COMMITTEES 2015 MEETING SCHEDULE

Gen. Docket 90-53 and WT Docket 02-378

The Region 19 (New England)[1] 700 MHz and 800 MHz Public Safety Regional Planning Committees (RPC) will hold the following quarterly meetings during 2015. The 700 MHz meeting will include 4.9 GHz planning. The 800 MHz meeting will be held following a short break at the conclusion of the 700 MHz meeting.

- **March 10, 2015**
  10:00 a.m. - 2:00 p.m.
  Kennebunkport Fire Department
  32 North Main Street
  Kennebunkport, ME 04046

- **June 9, 2015**
  10:00 a.m. - 2:00 p.m.
  Rhode Island Emergency Operations Center
  645 New London Ave
  Cranston, RI 02920

- **September 8, 2015**
  10:00 a.m. - 2:00 p.m.
  Connecticut Fire Academy
  34 Perimeter Road
  Windsor Locks, CT 06096

- **December 8, 2015**
  10:00 a.m. - 2:00 p.m.
  New Hampshire Department of Public Safety
  33 Hazen Drive

[1] The Region 19 regional planning area includes the following states: Connecticut (except Fairfield, Litchfield, New Haven and Middlesex counties), Maine, New Hampshire, Rhode Island and Vermont.

Concord, NH 03305

The meeting of the Region 19 700 MHz National Public Safety Regional Planning committee will convene at 10:00 a.m. The purpose of these meetings is to discuss the needs of the 700 MHz and 4.9 GHz spectrum users including Public Safety, Public Health, Emergency Management and Public Utility services.

All eligible public safety providers whose sole purpose or principal purpose is to protect the safety of life, health, or property in Region 19 would utilize these frequencies. It is essential that not only public safety, but all government, Native American Tribal, and non-governmental organizations eligible under Section 90.523 of the Commission's Rules be represented in order to ensure that each agency's future spectrum needs are considered in the allocation process.

Interested parties wishing to participate in the planning process for utilization of the new public safety spectrum in the 700 MHz, 800 MHz and 4.9 GHz bands are encouraged to attend. For additional information concerning this meeting, please contact either the Region 19 Chairman or Vice-Chairman listed below or visit the committee web site at www.ner700mhz.org.

Jerry Zarwanski, Chairman
Region 19 700 MHz Public Safety RPC
Department of Public Safety
Division of Fire, Emergency and Building Services
1111 Country Club Road
P.O. Box 2794
Middletown, Connecticut 06457
(860) 685-8157
Jerry.Zarwanski@ct.gov

Stephen Verbil, Vice-Chairman
Region 19 700 MHz Public Safety RPC
Department of Public Safety
Division of Fire, Emergency and Building Services
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P.O. Box 2794
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(860) 685-8127
Stephen.Verbil@ct.gov

-FCC-

Current 700MHz Email Distribution List

Zarwanski, Jerry

Contact Group Name: 700MHz Distribution List

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Zarwanski, Jerry

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COORDINATION AND DISPUTE RESOLUTION PROCEDURES BETWEEN 700 MHZ REGIONAL PLANNING COMMITTEES OF REGION 8, REGION 19 AND REGION 30

I. Introduction

This is a mutually agreed upon Inter-Regional Coordination Procedures and Dispute Resolution Procedures Agreement by and between the 700 MHz Regional Planning Committees of:

- Southern New York State and New Jersey State Region - Region 8 (hereinafter Region 8), and
- New England States Region - Region 19 (hereinafter Region 19), and
- Northern New York State Region – Region 30 (hereinafter Region 30)

Responsible Radiation

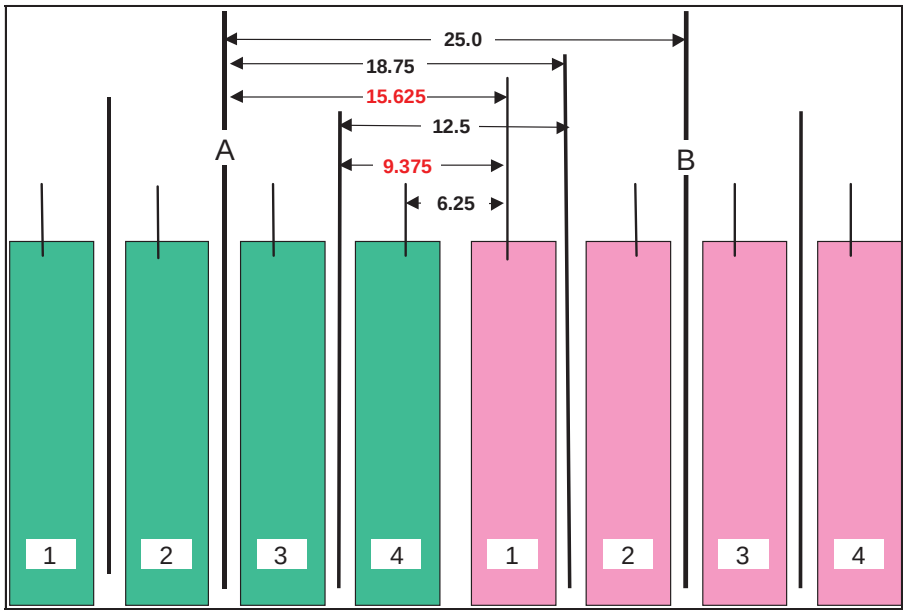
For all proposed facilities within the region, 80% of the 50 dBμ (-82 dBm) Protected Service Area (PSA) must lie within the jurisdictional boundary plus an 8 km buffer zone. The 50 dBμ (-82 dBm) PSA shall be assessed using Longley- Rice analyses.

Interference Protection – Co-Channel

The co-channel 15 dBμ (-119 dBm) interfering signal, assessed using Longley-Rice analyses, will be allowed to touch but not overlap the incumbent's 40 dBμ (-93 dBm) predicted coverage area of the system being evaluated, assessed using Longley-Rice analyses.

Interference Protection – Adjacent Channel

The evaluation of adjacent-channel interference will follow the co-channel procedure above, except that the effective radiated power of the proposed stations shall be de-rated to account for Adjacent- Channel Coupled Power Ratio (ACCPR) effects, e.g. -119dBm less the ACCPR for the respective case. Please refer to the table below for the appropriate ACCPR values; note that the channel bandwidth should be larger than the technology-specific emissions bandwidth.



Potential Frequency Separations

Case	Spacing	ACCPR
25 kHz to 25 kHz	25 kHz	65 dB
25 kHz to 12.5 kHz	18.750 kHz	65 dB
25 kHz to 6.25 kHz	15.625 kHz	>40 dB
12.5 kHz to 12.5 kHz	12.5 kHz	65 dB
12.5 kHz to 6.25 kHz	9.375 kHz	>40 dB
6.25 kHz to 6.25 kHz	6.25 kHz	65 dB

ACCPR Values For Potential Frequency Separations

These procedures will be used when an applicant for 700 MHz spectrum has a proposed interference prediction which extends into an adjacent Public Safety Region(s) of the Region receiving the application. Such applications will be reviewed for approval by the affected Region. Service area shall normally be defined as the area included within the jurisdictional boundary of the applicant, plus 8 km.

Interference shall normally be defined as the case when:

- a 15 dBu (-119dBm) co-channel Longley-Rice analysis overlaps an incumbent's 40dBu (-93dBm) Longley-Rice analysis

or

- the ACCPR derated adjacent channel Longley-Rice analysis overlaps an incumbent's 40dBu (-93dBm) Longley-Rice analysis

In the case where a frequency/channel has not yet been applied for nor allocated to an entity, the incumbent's protection area shall be the CAPRAD allocated county borders plus an 8km buffer.

In the case where a frequency/channel has been applied for and allocated to an entity but not yet licensed, that incumbent shall be afforded protection as if licensed.

Other definitions of service area or interference may be justified with an accompanying Memorandum of Understanding (MOU) or other application documentation between involved agencies. Each Region retains the right to accept or reject other definitions on a case by case basis.

II. COORDINATION PROCEDURES

The following are the guidelines for inter-regional coordination which are accepted by Region 8, Region 19 and Region 30.

a. Each Region will announce when it is accepting applications and the parameters that it has established filing applications.
b. Applications by eligible entities will be accepted within each Region's parameters.
c. Regional review and coordination of applications will be conducted. The review will include a technical review resulting in assignment of channels.
d. After Regional review, a copy of those frequency-specific applications requiring adjacent Region approval, including a definition statement of proposed service area, shall then be forwarded to the adjacent Region(s) for review. This information will be sent to the adjacent Regional chairperson(s) using the CAPRAD database.
e. The adjacent Region will review the application. If the application is approved, this Region will send a letter of concurrence, via the CAPRAD database, to the initiating Regional chairperson within thirty (30) calendar days of receipt of the application by the adjacent Region.

III. DISPUTE RESOLUTION

A. If the adjacent Region(s) does not approve the request, the adjacent Region shall document the reasons for partial or non-concurrence, and respond, via email, to the initiating Region. Response will be sent within thirty (30) calendar days of receipt of the application by the adjacent Region. The initiating Region will attempt to modify the application to satisfy the objections of the adjacent Region.

B. If the applying Region cannot modify the application to satisfy the objections of the adjacent Region then, a working group comprised of representatives of the two Regions shall be convened to attempt to resolve the dispute. The working group will be convened within thirty (30) calendar days of the date that the initiating Region received notice from the adjacent Region. The working group shall then report its findings within thirty (30) calendar days to the Regional chairpersons via email through the CAPRAD database. Findings may include, but not be limited to:

- Unconditional concurrence;
- Conditional concurrence contingent upon modification of applicant's technical parameters; or
- Partial or total denial of proposed frequencies due to inability to meet co-channel/adjacent channel interference free protection to existing licensees within the adjacent Region.

C. If the working group does not resolve the dispute, then the matter shall be forwarded for evaluation to the National Plan Oversight Committee (NPOC), of the National Public Safety Telecommunications Council. Each Region involved in the dispute shall include a detailed explanation of its position, including engineering studies and any other technical information deemed relevant. The NPOC will, within thirty (30) calendar days, report its recommendation(s) to the Regional chairpersons via the CAPRAD database. The NPOC's decision may support either of the disputing Regions or it may develop a proposal that it deems mutually advantageous to each disputing Region.

D. When adjacent Region concurrence has been secured, and the channel assignments do not change the Region's current Federal Communications Commission (FCC) approved channel assignment matrix, the initiating Region may then advise the applicant(s) that their application may be forwarded to a frequency coordinator for processing and filing with the FCC.

E. Where adjacent Region concurrence has been secured, and the channel assignments changes the Region's current FCC approved channel assignment matrix, then the initiating Region shall file with the FCC a *Petition to Amend* its current frequency matrix, to reflect the new channel assignments. The initiating Region will send a copy of the *Petition* to the adjacent Regional chairperson(s).

F. Upon the FCC's issuance of an *Order* adopting the amended channel assignment matrix, the initiating Regional chairperson will send a courtesy copy of the *Order* to the adjacent Regional chairperson(s). The initiating Region then advises the applicant(s) that they may forward their applications to the frequency coordinator for processing and filing with the Commission.

IV. CONCLUSION

A. This agreement contains the entire understanding among Region 8, Region 19 and Region 30 and supersedes any and all prior understandings, negotiations and agreements, whether written or oral, among them respecting subject matter herein.

B. The parties each bind themselves, successors, assigns and legal representatives with respect to all covenants of this Agreement.

C. This Agreement becomes effective upon the date of the last signatory's signature.

Morton Leifer

_____ 27-October 2015

Region 8 Authorized Representative Date

Jerry Zerkowski

_____ 26-October 2015

Region 19 Authorized Representative Date

_____ 26-October-2015

Region 30 Authorized Representative Date

The New England 700MHz Committee Region 19

June 10, 2015

Mr. Allen Demcoe
Chief, Office of Emergency Communications
Middlesex County Department of Public Safety and Health
1001 Fire Academy Drive
Sayreville, NJ 08872

RE: New England Region 19 700 MHz Plan

Dear Mr. Demcoe:

Attached is the 700 MHz Plan Amendment for New England Region 19. At a Region 19 meeting that was held on June 9, 2015, the committee voted and approved to move the Region 19 700MHz Amended Plan forward to Region 8 and 30 with forth coming changes to the following sections:

110 Part I, Section 7 Interoperability Channel Usage (area highlighted in green)
237 Part II, Appendix L (area highlighted in yellow)
239 Part II, Appendix N, Inter Region Coordination & Dispute Resolution (area written in blue)

Further review of sections "110" and "237" by our committee is required. Section" 239" needs mutual coordination between Regions. Region 19 will provide your Region with the updated sections as soon as the committee can confirm the written section and data.

Region 19 is seeking your Region's approval of this Plan so that we may submit it to the Federal Communications Commission. Please review and respond within 60 days of receipt.

If you have any questions, please contact me. My phone number is (860) 685-8157. My email is: jerry.zarwanski@ct.gov. Thank you for your time and attention to this matter.

Sincerely,

Jerry Zarwanski

Jerry Zarwanski, Chairman
New England Region 19 700 MHz Committee
c/o Department of Emergency Services and Public Protection
Division of Statewide Emergency Telecommunications
1111 Country Club Road
Middletown, CT 06457

Attachment

The New England 700MHz Committee Region 19

June 10, 2015

Mr. Lee Shurtleff
Region 30, New York
92 Brown Road
Ithaca, NY 14850

RE: New England Region 19 700 MHz Plan

Dear Mr. Shurtleff:

Attached is the 700 MHz Plan Amendment for New England Region 19. At a Region 19 meeting that was held on June 9, 2015, the committee voted and approved to move the Region 19 700MHz Amended Plan forward to Region 8 and 30 with forth coming changes to the following sections:

110 Part I, Section 7 Interoperability Channel Usage (area highlighted in green)
237 Part II, Appendix L (area highlighted in yellow)
239 Part II, Appendix N, Inter Region Coordination & Dispute Resolution (area written in blue)

Further review of sections "110" and "237" by our committee is required. Section" 239" needs mutual coordination between Regions. Region 19 will provide your Region with the updated sections as soon as the committee can confirm the written section and data.

Region 19 is seeking your Region's approval of this Plan so that we may submit it to the Federal Communications Commission. Please review and respond within 60 days of receipt.

If you have any questions, please contact me. My phone number is (860) 685-8157. My email is: jerry.zarwanski@ct.gov. Thank you for your time and attention to this matter.

Sincerely,

Jerry Zarwanski

Jerry Zarwanski, Chairman
New England Region 19 700 MHz Committee
c/o Department of Emergency Services and Public Protection
Division of Statewide Emergency Telecommunications
1111 Country Club Road
Middletown, CT 06457

Attachment

Zarwanski, Jerry

From:	Zarwanski, Jerry
Sent:	Monday, August 24, 2015 8:58 AM
To:	'Allen Demcoe'; 'lshurtleff@tompkins-co.org'
Cc:	'David Stern'; 'm.leifer@clarkstown.org'; 'leiferm@apcointl.org'; 'Yurman, Joseph'; 'yurmanj@apco911.org'; 'lguedko@dshes.ny.gov'; 'mdelaney@dhses.ny.gov'; 'Robert Isby'; 'James Kowalik'; 'kowalik@apco911.org'; 'James P. Kowalik (E-mail 2)'; 'Ruggiero, John (POL)'; Verbil, Stephen; Wright, Scott; Youell, William
Subject:	RE: Region 19 700MHz Amended Plan
Attachments:	109 Part 1, Section 06 - 700MHz Channel Application Procedures.doc; 110 Part 1, Section 07 - Interoperability Channel Usage.doc; 237 Part 2, Appendix L - November 2008 CAPRAD Sort.pdf

Chairman Demcoe & Shurtleff,

The following sections in the attachments have been revised to complete the Region 19 700MHz plan. There is still one section, Section 239 Part II, "Appendix N", Inter Region Coordination & Dispute Resolution requires mutual cooperation between Regions to complete. Region 19 requests a meeting/conference call bridge be held to complete Section 239. Please provide suggested dates/time which we may meet.

NRPC representatives at the APCO conference suggested some inter region engineering coordination methods which can be discussed.

Region 19 representatives will be attending the Region 8, September 17, 2015 meeting at which time we can mutually agree and complete this section of the Region 19 700MHz Plan.

Thank you for your cooperation. Jerry Zarwanski

From: Zarwanski, Jerry
Sent: Thursday, June 11, 2015 9:46 AM
To: 'Allen Demcoe'; 'lshurtleff@tompkins-co.org'
Cc: 'David Stern'; m.leifer@clarkstown.org; 'leiferm@apcointl.org'; Yurman, Joseph; yurmanj@apco911.org; 'lguedko@dshes.ny.gov'; 'mdelaney@dhses.ny.gov'; Robert Isby; James Kowalik; kowalik@apco911.org; 'James P. Kowalik (E-mail 2)'; 'Ruggiero, John (POL)'
Subject: Region 19 700MHz Amended Plan

Chairman Demcoe & Shurtleff,

Region 19 has completed its 700MHz Amended Plan. Attached are the letters which have been sent with a CD in the mail. There are 3 sections that still need some attention. However, Region 19 membership believes that the plan is approximately 99% complete and has approved moving the Plan forward for concurrence. Two sections require further review. I will provide the corrected information/data as soon as the committee can verify the information. Section 239 Part II, "Appendix N", Inter Region Coordination & Dispute Resolution requires mutual cooperation between Regions to complete. I have requested a 60 day review process for concurrence. Regions are required to provide the FCC with a Plan update by October 30, 2015.

Additional Region 19 700MHz Amended Plan CD's can be mailed to you for distribution to your membership. Let me know the number and I will get them to you.

Thank you for your cooperation.

Jerry Zarwanski
Region 19 Chairman

FCC PUBLIC SAFETY REGION 30 (NEW YORK – ALBANY)

Lee Shurtleff, Chairman
Tompkins County
92 Brown Road
Ithaca, New York 14850
Phone: 607.257.3888 | E-Mail: LShurtleff@Tompkins-Co.org

Regional Planning Committee 30 700 MHz

September 8th, 2015

Jerry Zarwanski, Chairman
New England Region 19 700 MHz Committee
C/O Department of Emergency Services and Public Protection
Division of Statewide Emergency Telecommunications
1111 Country Club Road
Middletown, CT 06457

Re: PSR19 700 MHz Regional Planning Committee
Interregional Concurrence of Plan Amendment

Dear Chairman Zarwanski:

Region 30 has completed its review of Region 19's Amended 700 MHz Plan submitted on June 11th, 2015 and the further update to Region 19's Plan provided on August 24th, 2015. I am pleased to report that Region 30 **CONCURS** with the Region 19 700 MHz Plan, as amended.

Region 30 appreciates and empathizes with the effort required of the Regional Planning Committee and applauds your expedience and professionalism. We look forward to our continued, mutual cooperation in serving our constituents.

If you have any questions please do not hesitate to contact me (my contact information is in the title block) or the Region's Secretary, Robert Isby, Jr. via phone at (518) 389-8876 or E-Mail at Robert.Isby@Harris.com

Sincerely,

Lee Shurtleff
FCC Region 30 Chairman

Region 8
700 MHz Regional Public Safety
Planning Committee

Allen J. Demcoe
Chairman

FCC Region 8 700 and 800-MHz Planning Committees
Chief, Office of Emergency Communications
Middlesex County Department of Public Safety and Health
1001 Fire Academy Drive
Sayreville, NJ 08872
Tel: (732) 316-7183
Email: allen.demcoe@co.middlesex.nj.us

October 9, 2015

Mr. Jerry Zarwanski
Region 19 700 MHz Chairman
Connecticut Department of Public Safety
Office of Statewide Emergency Telecommunications
1111 Country Club Road
P.O. Box 2794
Middletown, CT 06457

Regarding: **WTB Docket 02-378: Interregional Concurrence for the Region 19 700 MHz Public Safety Communications Plan Amendment and Dispute Resolution Procedures**

Dear Mr. Zarwanski:

Regional Planning Committee (RPC) 8 is in receipt of the proposed modifications to RPC 19 700 MHz Region Plan, Plan Addenda and Dispute Resolution Procedures.

RPC 8, having fully reviewed the RPC 19 700 MHz Public Safety Communications Plan Amendment, Plan Addenda and Dispute Resolution Procedures, sends this letter to server as the official written concurrence for your proposed Plan.

Sincerely,

Morton Leifer

_____
Morton Leifer
Region 8 700 MHz Vice Chairman

Industry Canada Industrie Canada

MAY - 1 2013

Mr. Julius Genachowski
Chairman of the Federal Communications Commission
445 12th Street, SW
Washington, D.C. 20554
U.S.A.

Dear Mr. Genachowski,

In connection with the ongoing meetings of the United States of America-Canada Radio Technical Liaison Committee (RTLC), officials of the Federal Communications Commission (FCC) and Industry Canada (IC) have discussed and exchanged information in an effort to reach several new arrangements regarding the coordination of radiocommunication services in a number of frequency bands. During these meetings, FCC and IC staff reached an understanding on draft text for these new arrangements, H through N, inclusive, and Q and R, attached to this letter (the "Arrangements").

The Arrangements were drafted in accordance with the *Agreement between the United States of America and Canada on the Coordination and Use of Radio Frequencies Above 30 Megacycles per Second, effected by exchange of notes at Ottawa on October 24, 1962*. The Arrangements may become a part of that treaty or part of a potential replacement agreement and will be further reviewed by legal officers in this regard. Although the format of the attached Arrangements may change, the technical and procedural provisions provide a basis for allowing licensees to implement services.

Taking the above into account, Canada intends to apply the operational provisions of these Arrangements, on an interim basis, to facilitate sharing and coordination of frequency spectrum. I would ask the FCC to confirm that it intends to take the same course of action in this regard so that IC and FCC can start to implement the appropriate inter-agency procedures.

Sincerely,

Kelly Gillis
Senior Assistant Deputy Minister
Spectrum, Information Technologies and Telecommunications

Enclosures

Canada

Attachments:

Draft Arrangement H: Draft Sharing Arrangement between the Department of Industry of Canada and the Federal Communications Commission of the United States of America Concerning the use of the Frequency Bands 1850-1915 MHz and 1920-1995 MHz by Personal Communications Services along the Canada-United States Border

Draft Arrangement I: Draft Sharing Arrangement between the Department of Industry of Canada and the Federal Communications Commission of the United States of America Concerning the use of the Frequency Bands 1710-1755 MHz and 2110-2155 MHz by Advanced Wireless Services along the Canada-United States Border

Draft Arrangement J: Draft Sharing Arrangement between the Department of Industry of Canada and the Federal Communications Commission of the United States of America Concerning the use of the Frequency Band 1670-1675 MHz by Fixed and Mobile (except Aeronautical Mobile) Services along the Canada-United States Border

Draft Arrangement K: Draft Sharing Arrangement between the Department of Industry of Canada and the Federal Communications Commission of the United States of America Concerning the use of the Frequency Band 1427-1432 MHz by Telemetry Systems and Subscriber Radio Systems in the Fixed Service along the Canada-United States Border

Draft Arrangement L: Draft Sharing Arrangement between the Department of Industry of Canada and the Federal Communications Commission of the United States of America Concerning the use of the Frequency Band 4940-4990 MHz by the Mobile and Fixed Services along the Canada-United States Border

Draft Arrangement M: Draft Sharing Arrangement between the Department of Industry of Canada and the Federal Communications Commission of the United States of America Concerning the use of the Frequency Bands 2155-2162 MHz and 2500-2690 MHz by terrestrial stations along the Canada-United States Border

Draft Arrangement N: Draft Sharing Arrangement between the Department of Industry of Canada and the Federal Communications Commission of the United States of America Concerning the use of the Frequency Bands 849-851 MHz and 894-896 MHz by Air-Ground Systems along the Canada-United States Border

...2

Draft Arrangement Q: Draft Sharing Arrangement between The Department of Industry of Canada and the Federal Communications Commission of the United States of America Concerning the Use of the Frequency Bands 768–776 and 798-806 MHz by the Land Mobile Service Along the Canada-United States Border

Draft Arrangement R: Draft Sharing Arrangement between the Department Of Industry Of Canada and the Federal Communications Commission of the United States of America Concerning the Use of the Frequency Band 3650-3700 MHz by the Fixed and Mobile Services Along the Canada-United States Border

ARRANGEMENT H

SHARING ARRANGEMENT BETWEEN THE DEPARTMENT OF INDUSTRY OF CANADA AND THE FEDERAL COMMUNICATIONS COMMISSION OF THE UNITED STATES OF AMERICA CONCERNING THE USE OF THE FREQUENCY BANDS 1850 - 1915 MHz and 1920 - 1995 MHz BY PERSONAL COMMUNICATIONS SERVICES ALONG THE CANADA-UNITED STATES BORDER

The Department of Industry of Canada ("Industry Canada") and the Federal Communications Commission of the United States of America ("FCC"), hereinafter referred to as the "Agencies",

Have agreed to the following:

1. Scope

1.1 This Arrangement is done pursuant to the *Exchange of Notes (October 24, 1962) between the Government of Canada and the Government of the United States of America concerning the coordination and use of radio frequencies above thirty megacycles per second*, with annex, done at Ottawa October 24, 1962, as amended, and covers the sharing and coordination of frequency spectrum for the establishment and operation of personal communications services ("PCS") or similar services in the bands 1850-1915 MHz and 1920-1995 MHz along the Canada-United States border.

1.2 This Arrangement is subject to review at any time at the request of either Agency, the U.S. Department of State or the Department of Foreign Affairs and International Trade of Canada.

2. PCS Use of the Band

2.1 The Agencies shall share the 1850-1915 MHz and 1920-1995 MHz frequency bands on an equal basis along the border and, to the extent possible, the Agencies shall have full use of those frequencies or sub-bands identified for the provision of PCS or similar services within their respective countries.

3. Existing Microwave Use of the Band

3.1 After the entry into force of this Arrangement, the Agencies shall limit and discourage additional use of the 1850-1915 MHz and 1920-1995 MHz frequency bands by stations of fixed point-to-point microwave systems to the extent possible.

3.2 After the entry into force of this Arrangement, the Agencies shall not license any new use of the 1920-1930 MHz band by stations in fixed point-to-point microwave systems. This band has been designated for unlicensed PCS use in the United States and license-exempt PCS use in Canada.

4. Coordination of PCS with Fixed Microwave Stations

4.1 Each Agency agrees that it will only authorize new PCS or other similar services on the basis that harmful interference is not caused to existing fixed point-to-point microwave stations authorized by the other Agency.

4.2 The Agencies shall require all PCS licensees with stations located within 120 km of the border to coordinate with licensees of existing fixed point-to-point microwave stations. Such coordination shall be based on:

4.2.1 guidelines for applying the interference protection criteria for fixed stations as specified in the Telecommunications Industry Association's Telecommunications Systems Bulletin TSB 10: "Interference Criteria for Microwave Systems," as amended from time to time; or

4.2.2 other procedures that are acceptable to the PCS and fixed microwave licensees.

4.3 In the event that there is interference to an existing fixed point-to-point microwave station from any PCS station located beyond 120 km from the border, the Agencies agree to take appropriate steps to resolve such interference.

5. Coordination between Licensed PCS Stations

5.1 The Agencies agree that the following or a similar clause shall appear on all authorizations for PCS base stations within 72 km of the border:

"This authorization is subject to the condition that, in the event that systems using the same frequencies as granted herein are authorized in an adjacent foreign territory (Canada/United States), future coordination of any base station transmitters within 72 km of the United States-Canada border shall be required to eliminate any harmful interference to operations in the adjacent foreign territory and to ensure continuance of equal access to the frequency bands by both countries."

5.2 The Agencies agree that the predicted or measured median field strength of any PCS base station located in one country shall not exceed 47 dBμV/m at any location at or beyond the United States-Canada border in the other country unless both the affected PCS licensees in adjacent areas and the Agencies agree to a higher value.

5.3 The Agencies agree that compatible independent operation of PCS systems on either side of the border shall be best assured through coordination of pertinent system operating and technical parameters by PCS licensees. The Agencies shall require that the PCS licensees carry out such coordination and notify both the FCC and Industry Canada within a reasonable period of time when an agreement is reached or when a satisfactory agreement cannot be reached. The Agencies may also require that any agreements reached by PCS licensees be subject to review by the Agencies.

ARRANGEMENT I

SHARING ARRANGEMENT BETWEEN THE DEPARTMENT OF INDUSTRY OF CANADA AND THE FEDERAL COMMUNICATIONS COMMISSION OF THE UNITED STATES OF AMERICA CONCERNING THE USE OF THE FREQUENCY BANDS 1710 - 1755 MHz AND 2110 - 2155 MHz BY ADVANCED WIRELESS SERVICES ALONG THE CANADA-UNITED STATES BORDER

The Department of Industry of Canada ("Industry Canada"), and the Federal Communications Commission of the United States of America ("FCC"), hereinafter referred to as the "Agencies",

Have agreed to the following:

1. Scope

1.1 This Arrangement is done pursuant to the *Exchange of Notes (October 24, 1962) between the Government of Canada and the Government of the United States of America concerning the coordination and use of radio frequencies above thirty megacycles per second*, with annex, done at Ottawa October 24, 1962, as amended, and covers the sharing and coordination of frequency spectrum for the establishment and operation of advanced wireless services ("AWS") operating in the bands 1710-1755 MHz and 2110-2155 MHz along the Canada-United States border.

1.2 This Arrangement is subject to review at any time at the request of either Agency, the U.S. Department of State or the Department of Foreign Affairs and International Trade of Canada.

2. General Principles

2.1 The Agencies shall share the frequency bands 1710-1755 MHz and 2110-2155 MHz on an equal basis along the border and, to the extent possible, the Agencies shall have full use of these frequencies or sub-bands within their respective countries for the provision of AWS.

2.2 The Agencies shall require that AWS licensees in the frequency bands 1710-1755 MHz and 2110-2155 MHz carry out coordination for their respective service areas on both sides of the border in accordance with Section 3 of this Arrangement.

2.3 The Agencies shall encourage AWS licensees to enter into agreements with licensees on the other side of the border. These agreements are intended to facilitate coordination and allow for the reasonable and timely development of the respective systems of the licensees. These agreements also allow for the provision of services by each licensee within its licensed service area to the extent possible.

2.4 The Agencies shall encourage licensees that enter into agreements under section 2.3 above to take full advantage of interference mitigation techniques such as antenna

directivity, polarization, frequency offset, shielding, site selection and/or power control to facilitate the coordination of the licensees' systems.

2.5 The Agencies shall provide all data and calculations for determining compliance with this Arrangement upon request by the other Agency.

2.6 If a licence for operation in the frequency bands 1710-1755 MHz and 2110-2155 MHz is transferred, assigned or reissued, the Agencies shall require any existing agreement that formed the basis of coordination in the border area to continue to apply with respect to the new licensee unless a new agreement is reached.

2.7 In certain exceptional circumstances, the Agencies may agree to special coordination allowing variation(s) in technical conditions in this Arrangement through an exchange of correspondence.

3. Cross-Border Coordination between AWS Stations

3.1 Coordination of an AWS station shall be required if: (a) it is located at a distance less than 72 km from the United States-Canada border; and (b) the power flux density ("pfd") produced by the AWS station at ground level anywhere in the other country's territory exceeds -106 dBW/m^2 in any 1 MHz bandwidth.

3.2 When coordination is required, the Agencies shall ensure that the following process is applied:

3.2.1 The licensee seeking coordination shall determine the maximum pfd value that could be produced at and beyond the border by any single transmitting AWS station. In making this determination (calculation), the licensee shall use good engineering practice and generally accepted terrain-sensitive propagation models;

3.2.2 It shall be the responsibility of the licensee seeking coordination to communicate with licensees on the other side of the border, by registered mail (or other mutually acceptable method) providing a clear indication of when coordination was initiated;

3.2.3 A recipient of a coordination request shall respond by registered mail (or other mutually acceptable method) within 30 days of receipt to state any objection to the deployment of the AWS station. The date of postmark shall be taken as the date of response. If no objection is raised within that time frame, then the licensee initiating the coordination request may proceed with deployment of the AWS station;

3.2.4 If a recipient of a coordination request raises an objection within 30 days of receipt of that request, licensees shall collaborate to develop a mutually acceptable solution to the potential interference problem;

3.2.5 In the event that licensees cannot reach a mutually acceptable solution within 30 days of a receipt of an objection, either licensee may request its Agency to facilitate resolution of the case with the other Agency. An AWS station subject to coordination

shall not be placed in operation until an agreement has been reached between the relevant licensees or until the Agencies have agreed on sharing terms; and

3.2.6 In cases where there is no licensee within 72 km on the opposite side of the border, any AWS station shall not produce a pfd at and beyond the border that exceeds -106 dB(W/m^2) in any 1 MHz bandwidth, unless agreed to by the Agencies.

3.3 The Agencies shall require that AWS licensees coordinate using the process described above if modifications to any of their AWS stations would result in a pfd at or beyond the border that exceeds -106 dBW/m^2 in any 1 MHz bandwidth.

4. Cross-Border Coordination of AWS Stations with Existing Stations

4.1 New fixed microwave stations (non-AWS) in the bands 1710-1755 MHz and 2110-2150 MHz authorized after the entry into force of this Arrangement shall not receive protection from, nor cause interference to, any AWS stations on the other side of the border or any fixed microwave station authorized by the other Agency prior to the entry into force of this Arrangement.

4.2 The operation of an AWS station shall be on the basis that interference is not caused to existing fixed microwave stations authorized by the other Agency prior to the entry into force of this Arrangement.

4.3 The Agencies shall require coordination of any AWS station located within 120 km of the border with fixed microwave stations licensed prior to the entry into force of this Arrangement. Such coordination shall be based on:

4.3.1 Guidelines for applying the interference protection criteria for fixed stations as specified in the Telecommunications Industry Association's Telecommunications Systems Bulletin TSB 10: "Interference Criteria for Microwave Systems", as amended from time to time; or

4.3.2 Other procedures acceptable to the AWS and fixed microwave licensees.

4.4 It is recognized that in some instances the Agencies may be required to become involved in the coordination process.

4.5 In the event that there is interference to any fixed microwave station from an AWS station located beyond 120 km from the border, the Agencies agree to take appropriate steps to resolve such interference.

4.6 The Agencies shall require AWS licensees to coordinate with existing licensees operating in the 2150-2155 MHz band when the pfd level of the AWS station exceeds -116 dBW/m^2 in any 1 MHz bandwidth at or beyond the border.

5. Information Exchange

5.1 To facilitate the coordination required under this Arrangement, the Agencies shall exchange information including, but not limited to either: (1) licensee name(s); (2) licensed service areas; and (3) licensee point(s) of contact; or shall provide to one another alternative means to obtain that information.

5.2 When necessary, the Agencies shall provide information to their respective licensees to facilitate the coordination required under this Arrangement.

5.3 To facilitate cross-border coordination between licensees, the Agencies shall encourage licensees to exchange data as listed in Annex A to this Arrangement.

Annex A - Parameters for Coordination

Licensee information (Corporate name/Mailing address/Phone/Fax/Email address)
Location of transmitter (Community/State/Province)
Geographical coordinates of transmitting antenna (NAD 83)
Equivalent Isotropic Radiated Power (EIRP) (dBW)
Ground elevation and antenna height above ground (m)
Center frequency (MHz)
Polarization
Antenna pattern/tabulation of the pattern
Azimuth of the maximum antenna gain
Bandwidth and emission designation

ARRANGEMENT J

SHARING ARRANGEMENT BETWEEN THE DEPARTMENT OF INDUSTRY OF CANADA AND THE FEDERAL COMMUNICATIONS COMMISSION OF THE UNITED STATES OF AMERICA CONCERNING THE USE OF THE FREQUENCY BAND 1670 - 1675 MHz BY FIXED AND MOBILE (EXCEPT AERONAUTICAL MOBILE) SERVICES ALONG THE CANADA-UNITED STATES BORDER

The Department of Industry of Canada ("Industry Canada") and the Federal Communications Commission of the United States of America ("FCC"), hereinafter referred to as the "Agencies",

Have agreed to the following:

1. Scope

1.1 This Arrangement is done pursuant to the *Exchange of Notes (October 24, 1962) between the Government of Canada and the Government of the United States of America concerning the coordination and use of radio frequencies above thirty megacycles per second*, with annex, done at Ottawa October 24, 1962, as amended, and covers the sharing and coordination of frequency spectrum for the establishment and operation of fixed and mobile (except aeronautical mobile) services in the band 1670-1675 MHz along the Canada-United States border.

1.2 This Arrangement is subject to review at any time at the request of either Agency, the U.S. Department of State or the Department of Foreign Affairs and International Trade of Canada.

2. General Principles

2.1 The Agencies shall share the frequency band 1670-1675 MHz on an equal basis along the border and, to the extent possible, the Agencies shall have full use of these frequencies or sub-bands within their respective countries.

2.2 The Agencies shall require that licensees in the frequency band 1670-1675 MHz carry out coordination for all transmitting stations in their respective service areas on both sides of the border in accordance with Section 3 of this Arrangement.

2.3 The Agencies shall encourage licensees to enter into agreements with licensees on the other side of the border. These agreements are intended to facilitate coordination and allow for the reasonable and timely development of the respective systems of the licensees. These agreements also allow for the provision of services by each licensee within its licensed service area to the extent possible.

2.4 The Agencies shall encourage licensees that enter into agreements under section 2.3 above to take full advantage of interference mitigation techniques such as antenna directivity, polarization, frequency offset, shielding, site selection and/or power control to facilitate the coordination of the licensees' systems.

2.5 The Agencies shall provide all data and calculations for determining compliance with this Arrangement upon request by the other Agency.

2.6 If a licence for operation in the frequency band 1670-1675 MHz is transferred, assigned or reissued, the Agencies shall require any existing agreement that formed the basis of coordination in the border area to continue to apply with respect to the new licensee unless a new agreement is reached.

2.7 In certain exceptional circumstances, the Agencies may agree to special coordination allowing variation(s) in technical conditions in this Arrangement through an exchange of correspondence.

3. Cross-Border Coordination of Fixed and Mobile (except aeronautical mobile) Stations

3.1 Coordination of a fixed or mobile (except aeronautical mobile) station shall be required if: (a) it is located at a distance less than 120 km from the United States-Canada border; and (b) the power flux density (pfd) produced by the station at ground level anywhere in the other country's territory exceeds -106 dBW/m^2 in any 1 MHz bandwidth.

3.2 When coordination is required, the Agencies shall ensure that the following process is applied:

3.2.1 The licensee seeking coordination shall determine the maximum pfd value that could be produced at and beyond the border by any single transmitting station of the system. In making this determination (calculation), the licensee shall use good engineering practice and generally accepted terrain-sensitive propagation models;

3.2.2 It shall be the responsibility of the licensee seeking coordination to communicate with licensees on the other side of the border, by registered mail (or other mutually acceptable method) providing a clear indication of when coordination was initiated;

3.2.3 A recipient of a coordination request shall respond by registered mail (or other mutually acceptable method) within 30 days of receipt to state any objection to the deployment of the station. The date of postmark shall be taken as the date of response. If no objection is raised within that time frame, then the licensee initiating the coordination request may proceed with deployment of the station;

3.2.4 If a recipient of a coordination request raises an objection within 30 days of receipt of that request, licensees shall collaborate to develop a mutually acceptable solution to the potential interference problem;

3.2.5 In the event that licensees cannot reach a mutually acceptable solution within 30 days of a receipt of an objection, either licensee may request its Agency to facilitate resolution of the case with the other Agency. A station subject to coordination shall not be placed in operation until an agreement has been reached between the relevant licensees or until the Agencies have agreed to the sharing terms; and

3.2.6 In cases where there is no licensee within 120 km on the opposite side of the border, any station subject to coordination shall not produce a pfd at and beyond the border that exceeds -106 dBW/m^2 in any 1 MHz bandwidth, unless agreed to by the Agencies.

3.3 The Agencies shall require that licensees coordinate using the process described above if proposed modifications to any of their stations subject to coordination would result in a pfd at or beyond the border that exceeds -106 dBW/m^2 in any 1 MHz bandwidth.

4. Information Exchange

4.1 To facilitate the coordination required under this Arrangement, the Agencies shall exchange information including, but not limited to either: (1) licensee name(s); (2) licensed service areas; and (3) licensee point(s) of contact; or shall provide to one another alternative means to obtain that information.

4.2 Where necessary, the Agencies shall provide information to their respective licensees to facilitate the coordination required under this Arrangement.

4.3 To facilitate cross-border coordination between licensees, the Agencies shall encourage licensees to exchange data as listed in Annex A to this Arrangement.

Annex A - Parameters for Coordination

Licensee information (Corporate name/Mailing address/Phone/Fax/Email address)
Location of transmitter (Community/State/Province)
Geographical coordinates of transmitting antenna (NAD 83)
Equivalent Isotropic Radiated Power (EIRP) (dBW)
Ground elevation and antenna height above ground (m)
Center frequency (MHz)
Polarization
Antenna pattern/tabulation of the pattern
Azimuth of the maximum antenna gain
Bandwidth and emission designation

ARRANGEMENT K

SHARING ARRANGEMENT BETWEEN THE DEPARTMENT OF INDUSTRY OF CANADA AND THE FEDERAL COMMUNICATIONS COMMISSION OF THE UNITED STATES OF AMERICA CONCERNING THE USE OF THE FREQUENCY BAND 1427 - 1432 MHz BY TELEMETRY SYSTEMS AND SUBSCRIBER RADIO SYSTEMS IN THE FIXED SERVICE ALONG THE CANADA-UNITED STATES BORDER

The Department of Industry of Canada ("Industry Canada") and the Federal Communications Commission of the United States of America ("FCC"), hereinafter referred to as the "Agencies",

Have agreed to the following:

1. Scope

1.1 This Arrangement is done pursuant to the *Exchange of Notes (October 24, 1962) between the Government of Canada and the Government of the United States of America concerning the coordination and use of radio frequencies above thirty megacycles per second*, with annex, done at Ottawa October 24, 1962, as amended, and covers the sharing and coordination of frequency spectrum for the establishment and operation of subscriber radio systems ("SRS") in the fixed service and telemetry ("TEL") systems in the band 1427-1432 MHz along the United States-Canada border.

1.2 This Arrangement is subject to review at any time at the request of either Agency, the U.S. Department of State or the Department of Foreign Affairs and International Trade of Canada.

2. General Principles

2.1 The Agencies shall share the frequency band 1427-1432 MHz on an equal basis along the border and, to the extent possible, the Agencies shall have full use of these frequencies or sub-bands for the provision of TEL and SRS within their respective countries.

2.2 The Agencies shall require that TEL and SRS licensees in the frequency band 1427-1432 MHz carry out coordination for their respective service areas on both sides of the border in accordance with Section 4 of this Arrangement.

2.3 The Agencies shall encourage TEL and SRS licensees to enter into agreements with licensees on the other side of the border. These agreements are intended to facilitate coordination and allow for the reasonable and timely development of the respective systems of the licensees. These agreements also allow for the provision of services by each licensee within its licensed service area to the extent possible.

2.4 The Agencies shall encourage licensees that enter into agreements under section 2.3 above to take full advantage of interference mitigation techniques such as antenna directivity, polarization, frequency offset, shielding, site selection and/or power control to facilitate the coordination of the licensees' systems.

2.5 The Agencies shall provide all data and calculations for determining compliance with this Arrangement upon request by the other Agency.

2.6 If a licence for operation in the frequency band 1427-1432 MHz is transferred, assigned or reissued, the Agencies shall require any existing agreement that formed the basis of coordination in the border area to continue to apply with respect to the new licensee unless a new agreement is reached.

2.7 In certain exceptional circumstances, the Agencies may agree to special coordination allowing variation(s) in technical conditions in this Arrangement through an exchange of correspondence.

3. Wireless Medical Telemetry Service ("WMTS")

3.1 Frequency coordination between Canadian and United States WMTS operators is not required.

4. Cross-Border Coordination of Telemetry and Subscriber Radio Systems

4.1 This Section of the Arrangement covers coordination of base stations (central transmitting stations) and their associated subscriber stations of both TEL and SRS systems located on either side of the United States-Canada border. Those stations shall be referred to respectively as TEL and SRS station(s).

4.2 Coordination of a TEL or SRS station shall be required if: (a) it is located at a distance less than 90 km from the United States-Canada border; and (b) the power flux-density (pfd) produced by the station at ground level anywhere in the other country's territory exceeds -116 dBW/m^2 in any 1 MHz bandwidth.

Notwithstanding clauses (a) and (b) above, coordination shall not be required for cases covered under section 4.6 below. In addition, coordination shall only be required between licensees whose assigned frequency channels overlap.

4.3 When coordination is required, the Agencies shall ensure that the following process is applied:

4.3.1 The licensee seeking coordination shall determine the maximum pfd value that could be produced at and beyond the border by any single transmitting station of the system. In making this determination (calculation), the licensee shall use good engineering practice and generally accepted terrain-sensitive propagation models.

4.3.2 A licensee establishing a TEL or SRS station shall contact all other licensees in the other country with a licensed area within 90 km of the transmitting TEL or SRS station;

4.3.3 It shall be the responsibility of the licensee seeking coordination to communicate with licensees on the other side of the border, by registered mail (or other mutually acceptable method) providing a clear indication of when coordination was initiated;

4.3.4 A recipient of a coordination request shall respond by registered mail (or other mutually acceptable method) within 45 days of receipt to state any objection to deployment of the proposed TEL or SRS station. The date of postmark shall be taken as the date of response. If no objection is raised within that time frame, then the licensee initiating the coordination request may proceed with deployment of the proposed TEL or SRS station;

4.3.5 If a recipient of a coordination request raises an objection within 45 days of receipt of that request, licensees shall collaborate to develop a mutually acceptable solution to the potential interference problem;

4.3.6 In the event that licensees cannot reach a mutually acceptable solution within 45 days of a receipt of an objection, either licensee may request its Agency to facilitate a resolution of the case with the other Agency. A station subject to coordination shall not be placed in operation either until an agreement has been reached between the relevant licensees or until the Agencies have agreed on sharing terms; and

4.3.7 In cases where there is no licensee on the opposite side of the border, any TEL or SRS station within 90 km of the Canada-U.S. border shall not produce a pfd at or beyond the border that exceeds -116 dBW/m^2 in any 1 MHz bandwidth, unless agreed to by the Agencies.

4.4 The Agencies shall require that licensees coordinate using the process described above if modifications to any of their TEL or SRS stations subject to coordination would result in a pfd at or beyond the border that exceeds -116 dBW/m^2 in any 1 MHz bandwidth.

4.5 Provided the frequency pairing is dissimilar on opposite sides of the border (i.e. a TEL/SRS licensee in one country is paired with WMTS on the other side of the border), a TEL or SRS station operating in the region of Windsor, in Canada, or Detroit, in the United States shall not be required to coordinate, but shall under no circumstances exceed a pfd level of -102 dBW/m^2 in any 1 MHz bandwidth in the territory of the other country in order to protect WMTS systems where Canadian and United States band plans do not align. This region is defined as Oakland, Wayne, Washtenaw, Macomb and Livingston Counties in Michigan in the United States and Essex County, Ontario in Canada.

4.6 Notwithstanding Section 4 above, a TEL or SRS system licensed prior to the entry into force of this Arrangement may continue to operate in the frequency range 1427-1432 MHz using its currently authorized parameters.

5. Information exchange

5.1 To facilitate the coordination required under this Arrangement, the Agencies shall exchange information including, but not limited to either: (1) licensee name(s); (2) licensed service areas; and (3) licensee point(s) of contact; or shall provide to one another alternative means to obtain that information.

5.2 Where necessary, the Agencies shall provide information to their respective licensees to facilitate licensee-to-licensee coordination required under this Arrangement.

5.3 To facilitate cross-border coordination between licensees, the Agencies shall encourage licensees to exchange the data listed in Annex A to this Arrangement.

Annex A - Parameters for Coordination

Licensee information (Corporate name/Mailing address/Phone/Fax/Email address)
Location of transmitter (Community/State/Province)
Geographical coordinates of transmitting antenna (NAD 83)
Equivalent Isotropic Radiated Power (EIRP) (dBW)
Ground elevation and antenna height above ground (m)
Center frequency (MHz)
Antenna pattern/tabulation of the pattern
Azimuth of the maximum antenna gain
Bandwidth and emission designation(s)

ARRANGEMENT L

SHARING ARRANGEMENT BETWEEN THE DEPARTMENT OF INDUSTRY OF CANADA AND THE FEDERAL COMMUNICATIONS COMMISSION OF THE UNITED STATES OF AMERICA CONCERNING THE USE OF THE FREQUENCY BAND 4940 - 4990 MHz BY THE MOBILE AND FIXED SERVICES ALONG THE CANADA-UNITED STATES BORDER

The Department of Industry of Canada ("Industry Canada") and the Federal Communications Commission of the United States of America ("FCC"), hereinafter referred to as the "Agencies",

Have agreed to the following:

1. Scope

1.1 This Arrangement is done pursuant to the *Exchange of Notes (October 24, 1962) between the Government of Canada and the Government of the United States of America concerning the coordination and use of radio frequencies above thirty megacycles per second*, with annex, done at Ottawa October 24, 1962, as amended, and covers the sharing and coordination of frequency spectrum for the establishment and operation of mobile and fixed radio services in the band 4940-4990 MHz along the Canada-United States border.

1.2 This Arrangement is subject to review at any time at the request of either Agency, the U.S. Department of State or the Department of Foreign Affairs and International Trade of Canada.

2. Coordination Zone

2.1 The coordination zone is the area adjacent to the Canada-United States border extending a distance of 48 km within either country.

3. General Sharing Arrangement

3.1 The Agencies shall share the 4940-4990 MHz band on an equal basis along the border within the coordination zone. The Agencies shall authorize frequency assignments in accordance with the limits given in Annex A.

3.2 In exceptional circumstances, the power flux density ("pfd") limit specified in Annex A may be exceeded provided that the Agencies agree.

3.3 The Agencies agree that the authorizations which they provide to their respective licensees shall be subject to the condition that licensees are expected to take full advantage of advanced routing and interference mitigation techniques such as antenna directivity, polarization, dynamic frequency selection, shielding, site

selection and/or power control to facilitate the implementation and operation of, and compatibility between their systems.

3.4 The Agencies agree that radio astronomy stations in the 4950-4990 MHz band must be protected from harmful interference in accordance with International Telecommunication Union *Radio Regulations* 5.149.

3.5 The Agencies agree not to authorize aeronautical and maritime mobile stations within 160 km of the border area without the written consent of the other Agency. Operation of such stations may be subject to additional technical and operational limits.

4. Information Exchange

4.1 The Agencies shall exchange information including, but not limited to either: (1) licensee name(s); (2) licensed service areas; and (3) licensee point(s) of contact; or shall provide to one another alternative means to obtain that information.

Annex A to Arrangement L

Transmitter Power and Power Flux Density ("pfd") Limits For General Sharing Arrangement

A1.1 Stations operating in the band 4940-4990 MHz shall not exceed the transmitter power limits corresponding to the transmitter's channel bandwidth given in Table A1 below. This provision applies only to stations employing an antenna of directional gain (remote and central stations are also included) of 9 dBi or less.

Table A1: Limits of Transmitter Power for Stations Operating in the 4940-4990 MHz Band

Channel Bandwidth (MHz)	Peak Transmitter Power (dBm)
1	20
5	27
10	30
15	32
20	33

A1.2 Stations employing an antenna of directional gain greater than 9 dBi shall meet a pfd of -114 dBW/m^2 in any 1 MHz bandwidth at and beyond the border, calculated using best engineering practices.

ARRANGEMENT M

ARRANGEMENT BETWEEN THE DEPARTMENT OF INDUSTRY OF CANADA AND THE FEDERAL COMMUNICATIONS COMMISSION OF THE UNITED STATES OF AMERICA CONCERNING THE USE OF THE FREQUENCY BANDS 2155–2162 MHz AND 2500-2690 MHz BY TERRESTRIAL STATIONS ALONG THE CANADA-UNITED STATES BORDER

The Department of Industry of Canada ("Industry Canada") and the Federal Communications Commission of the United States of America ("FCC"), hereinafter referred to as the "Agencies",

Have agreed to the following:

1. Scope

1.1 This Arrangement is done pursuant to the *Exchange of Notes (October 24, 1962) between the Government of Canada and the Government of the United States of America concerning the coordination and use of radio frequencies above thirty megacycles per second*, with annex, done at Ottawa October 24, 1962, as amended, and covers the sharing and coordination of frequency spectrum for the establishment and operation of terrestrial stations in the bands 2155–2162[1] MHz and 2500-2690[2] MHz along the Canada-United States Border. For the purposes of this Arrangement, terrestrial stations refer to stations in the fixed, mobile (except aeronautical mobile) and broadcasting service.

1.2 This Arrangement is subject to review at any time at the request of either Agency, the U.S. Department of State or the Department of Foreign Affairs and International Trade of Canada.

2. General Principles

2.1 The Agencies shall share the frequency bands 2155-2162 MHz and 2500-2690 MHz on an equal basis along the border and, to the extent possible, the Agencies shall have full use of these frequencies or sub-bands within their respective countries.

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1 Canada is using the frequency band 2110 to 2155 MHz for advanced mobile services and anticipates using the frequency band 2155 to 2162 MHz for similar services. In the U.S., the FCC has issued licences in the Advanced Wireless Services in the frequency band 2110 to 2155 MHz and has allocated and designated the frequency band 2155 to 2175 MHz for Advanced Wireless Services.

2 In the U.S., the FCC restructured the frequency band 2495-2690 MHz to introduce Broadband Radio Service ("BRS") and Educational Broadband Service ("EBS") in that band. BRS is formerly known as the Multipoint Distribution Service (MDS)/Multichannel Multipoint Distribution Service ("MMDS"). EBS is formerly known as the Instructional Television Fixed Service ("ITFS"). In Canada, Industry Canada restructured the frequency band 2500-2690 MHz to introduce BRS in that band, which will provide mobile service. Multipoint Communications Systems ("MCS"), providing broadband Internet access, and Multipoint Distribution Systems ("MDS"), providing broadcasting distribution services, continue to operate in that frequency band. MDS is authorized by the Canadian Radio-television and Telecommunications Commission ("CRTC") and/or Industry Canada.

2.2 The Agencies shall require that licensees in the frequency bands 2155-2162 MHz and 2500-2690 MHz carry out coordination for their respective service areas on both sides of the border in accordance with Section 3 of this Arrangement.

2.3 The Agencies shall encourage licensees to enter into agreements with licensees on the other side of the boarder. These agreements are intended to facilitate coordination and allow for the reasonable and timely development of the respective systems of the licensees. These agreements also allow for the provision of services by each licensee within its licensed service area to the extent possible.

2.4 The Agencies shall encourage licensees that enter into agreements under section 2.3 above to take full advantage of interference mitigation techniques such as antenna directivity, polarization, frequency offset, shielding, site selection and/or power control to facilitate the coordination of the licensees' stations.

2.5 The Agencies shall provide all data and calculations for determining compliance with this Arrangement upon request by the other Agency.

2.6 If a licence for operation in the frequency bands 2155-2162 MHz and 2500-2690 MHz is transferred, assigned or reissued, the Agencies shall require any existing agreement that formed the basis of coordination in the border area to continue to apply with respect to the new licensee unless a new agreement is reached.

2.7 In certain exceptional circumstances, the Agencies may agree to special coordination allowing variation(s) in technical conditions in this Arrangement through an exchange of correspondence.

3. Cross-Border Coordination

3.1 Stations that were successfully coordinated or notified prior to June 25, 2002 may continue to operate under the terms and conditions of those coordinations or notifications; and stations more than 80 km from the border that were licensed prior to June 25, 2002 may continue to operate in accordance with the parameters of their existing authorizations without further coordination requirements. Any modification to these stations that increases the potential for interference to stations in the other country is subject to section 3.2 below.

3.2 Coordination of a terrestrial station is required if: (a) it is located at a distance less than 120 km from the United States-Canada border; and (b) the power flux density (pfd) produced by the terrestrial station at ground level anywhere in the other country's territory exceeds -116 dBW/m^2 in any 1 MHz bandwidth. Stations on high elevations that are located at a distance greater than 120 km and less than 160 km from the border that have a radio line of sight path to any point on the surface of the earth at or beyond the border and produce a power flux density ("pfd") at ground level anywhere in the other country's territory that exceeds -116 dBW/m^2 in any 1 MHz bandwidth are also subject to coordination. In cases where both the United States-Canada border and the neighbouring service area lie within a body of water, the power flux density shall be calculated at the shoreline of the neighbouring service area.

3.3 When coordination is required, the Agencies shall ensure that the following process is applied:

3.3.1 The licensee seeking coordination shall determine the maximum pfd value that could be produced at and beyond the border by any single transmitting terrestrial station. In making this determination (calculation), the licensee shall use good engineering practice and generally accepted terrain-sensitive propagation models;

3.3.2 It shall be the responsibility of the licensee seeking coordination to communicate with licensees on the other side of the border, by registered mail (or other mutually acceptable method) providing a clear indication of when coordination was initiated;

3.3.3 A recipient of a coordination request shall respond by registered mail (or other mutually acceptable method) within 30 days of receipt to state any objection to deployment of the station. The date of the postmark shall be taken as the date of the response. If no objection is raised within that time frame, then the licensee initiating the coordination request may proceed with deployment of the station;

3.3.4 If a recipient of a coordination request raises an objection within 30 days of receipt of that request, licensees shall collaborate to develop a mutually acceptable solution to the potential interference problem;

3.3.5 In the event that licensees cannot reach a mutually acceptable solution within 30 days of receipt of an objection, either licensee may request its Agency to facilitate resolution of the case with the other Agency. A station subject to coordination shall not be placed in operation until an agreement has been reached between the relevant licensees or until the Agencies have agreed on sharing terms; and

3.3.6 In cases where there is no licensee within 120 km on the opposite side of the border, any station subject to coordination shall not produce a pfd at and beyond the border that exceeds -116 dBW/m^2 in any 1 MHz bandwidth, unless agreed to by the Agencies.

3.4 The Agencies shall require that licensees coordinate using the process described above if proposed modifications to any of their terrestrial stations subject to coordination would result in a pfd at or beyond the border that exceeds -116 dBW/m^2 in any 1 MHz bandwidth.

4. Information Exchange

4.1 To facilitate the coordination required under this Arrangement, the Agencies shall exchange information including, but not limited to, either: (1) licensee name(s); (2) licensed service areas; and (3) licensee point(s) of contact; or shall provide to one another alternative means to obtain that information.

4.2 Where necessary, the Agencies shall provide information to their respective licensees to facilitate the coordination required under this Arrangement.

4.3 To facilitate cross-border coordination between licensees, the Agencies shall encourage licensees to exchange data as listed in Annex A to this Arrangement.

Annex A - Parameters for Coordination

Licensee information (Corporate name/Mailing address/Phone/Fax/Email address)
Location of transmitter (Community/State/Province)
Geographical coordinates of transmitting antenna (NAD 83)
Equivalent Isotropic Radiated Power (EIRP) (dBW)
Ground elevation and antenna height above ground (m)
Centre frequency (MHz)
Polarization
Antenna pattern/tabulation of the pattern
Azimuth of the maximum antenna gain
Frequency offset information for analog systems
Bandwidth and Emission designation

ARRANGEMENT N

SHARING ARRANGEMENT BETWEEN THE DEPARTMENT OF INDUSTRY OF CANADA AND THE FEDERAL COMMUNICATIONS COMMISSION OF THE UNITED STATES OF AMERICA CONCERNING THE USE OF THE FREQUENCY BANDS 849-851 MHz AND 894-896 MHz BY AIR-GROUND SYSTEMS ALONG THE CANADA-UNITED STATES BORDER

The Department of Industry of Canada ("Industry Canada") and the Federal Communications Commission of the United States of America ("FCC"), hereinafter referred to as the "Agencies",

Have agreed to the following:

1. Scope

1.1 This Arrangement is done pursuant to the *Exchange of Notes (October 24, 1962) between the Government of Canada and the Government of the United States of America concerning the coordination and use of radio frequencies above thirty megacycles per second*, with annex, done at Ottawa October 24, 1962, as amended, and covers the sharing and coordination of frequency spectrum for the establishment and operation of air-ground systems in the frequency bands 849-851 MHz and 894-896 MHz along the Canada-United States border.

1.2 This Arrangement is subject to review at any time at the request of either Agency, the U.S. Department of State or the Department of Foreign Affairs and International Trade of Canada.

2. General Principles

2.1 The Agencies shall share the frequency bands 849-851 MHz and 894-896 MHz on an equal basis along the border and, to the extent possible, the Agencies shall have full use of these frequency bands for the provision of air-ground services within their respective countries.

2.2 The Agencies shall require that licensees in the frequency bands 849-851 MHz and 894-896 MHz carry out coordination for transmitting air-ground land stations in their respective service areas in accordance with Section 4 of this Arrangement.

2.3 The Agencies shall encourage licensees to enter into agreements with licensees on the other side of the border. These agreements are intended to facilitate coordination and allow for the reasonable and timely development of the respective systems of the licensees. These agreements should allow for the provision of services by each licensee within its licensed service area to the extent possible. These agreements may be used in lieu of the provisions in Section 4.

2.4 The Agencies shall provide all data and calculations for determining compliance with this Arrangement upon request by the other Agency.

2.5 If a licence for operation in the frequency bands 849-851 MHz and 894-896 MHz is transferred, assigned or reissued, the Agencies shall require that any existing agreement that formed the basis of coordination in the border area to continue to apply with respect to the new licensee unless a new agreement is reached.

2.6 In certain exceptional circumstances, the Agencies may agree to special coordination allowing variation(s) in technical conditions in this Arrangement through an exchange of correspondence.

3. Use of the Frequency Bands 849-851/894-896 MHz

3.1 The frequency band 849-851 MHz shall be used for ground-to-air transmissions and the frequency band 894-896 MHz shall be used for air-to-ground transmissions.

3.2 The Agencies may authorize air-ground operations based on the requirements of air-ground services in each country.

4. Cross-Border Coordination of Air-Ground Radiocommunication Systems

4.1 Coordination of a new or modified transmitting air-ground land station is required only if: (a) it is located at a distance less than 420 km from the United States-Canada border; and (b) the calculated power flux density (pfd) produced by the air-ground land station at any altitude between 3000 meters and 9000 meters above ground level at any location along the United States-Canada border exceeds -94 dBW/m² within any 1.25 MHz bandwidth.

4.2 When coordination is required, the Agencies shall ensure that the following process is applied:

4.2.1 The licensee seeking coordination shall calculate the maximum pfd that could be produced at and beyond the border by any single transmitting land station of the air-ground system . In making this determination (calculation), the licensee shall use a free space propagation model;

4.2.2 It is the responsibility of the licensee seeking coordination to communicate with licensee(s) on the other side of the border, by registered mail (or other mutually acceptable method) providing a clear indication of when coordination was initiated;

4.2.3 A recipient of a coordination request shall respond by registered mail (or other mutually acceptable method) within 30 days of receipt to state any objection to the deployment of the station. The date of postmark shall be taken as the date of response.

If no objection is raised within that time frame, then the licensee initiating the coordination request may proceed with deployment of this station;

4.2.4 If a recipient of a coordination request raises an objection within 30 days of receipt of that request, licensees shall collaborate to develop a mutually acceptable solution to the potential interference problem;

4.2.5 In the event that licensees cannot reach a mutually acceptable solution within 30 days of a receipt of an objection, either licensee may request its Agency to facilitate resolution of the case with the other Agency. A station subject to coordination shall not be placed in operation until an agreement has been reached between the relevant licensees or until the Agencies have agreed to the sharing terms; and

4.2.6 In cases where there is no licensee within 420 km on the opposite side of the border, a land station subject to coordination shall not produce a pfd at any altitude between 3000 meters and 9000 meters above ground level at any location along the United States-Canada border that exceeds -94 dBW/m² within any 1.25 MHz bandwidth unless agreed to by the Agencies.

5. Technical Requirements

5.1 The peak effective radiated power ("ERP") of airborne mobile stations shall not exceed 12 watts.

6. Information Exchange

6.1 To facilitate the coordination required under this Arrangement, the Agencies shall exchange information including, but not limited to, either: (1) licensee name(s); (2) licensed service areas; and (3) licensee point(s) of contact; or shall provide to one another alternative means to obtain that information.

6.2 Where necessary, the Agencies shall provide information to their respective licensees to facilitate the coordination required under this Arrangement.

6.3 To facilitate cross-border coordination between licensees, the Agencies shall encourage licensees to exchange data as listed in Annex A to this Arrangement.

Annex A - Parameters for Coordination

Licensee information (Corporate name/Mailing address/Phone/Fax/Email address)
Location of transmitter (Community/State/Province)
Geographical coordinates of transmitting antenna (NAD 83)
Equivalent Radiated Power (ERP) (dBW)
Ground elevation and antenna height above ground (m)
Center frequency (MHz)
Polarization
Antenna pattern/tabulation of the pattern
Azimuth of the maximum antenna gain
Bandwidth and emission designation

ARRANGEMENT Q

SHARING ARRANGEMENT BETWEEN THE DEPARTMENT OF INDUSTRY OF CANADA AND THE FEDERAL COMMUNICATIONS COMMISSION OF THE UNITED STATES OF AMERICA CONCERNING THE USE OF THE FREQUENCY BANDS 768-776 MHZ AND 798-806 MHZ BY THE LAND MOBILE SERVICE ALONG THE CANADA-UNITED STATES BORDER

The Department of Industry of Canada (Industry Canada), and the Federal Communications Commission of the United States of America (FCC), hereinafter referred to as the "Agencies".

Have agreed to the following:

1. Scope

1.1. This Arrangement is made pursuant to the *Exchange of Notes (October 24, 1962) between the Government of Canada and the Government of the United States of America concerning the coordination and use of radio frequencies above thirty megacycles per second*, with annex, completed at Ottawa October 24, 1962, as amended, and covers the sharing and coordination of frequency spectrum for the establishment and operation of land mobile radio services operating in the bands 768-776 MHz and 798-806 MHz along the Canada-United States border.

1.2. Aeronautical and maritime mobile services in this band are not covered by this Arrangement but may be subject to special coordination procedures on a case-by-case basis at the request of either agency prior to their introduction.

1.3. The Agencies may initiate and implement special coordination procedures allowing proposed stations to operate in a manner exceeding the technical conditions stated in this Arrangement within the sharing zones where the affected licensees agree to such conditions. Such special coordination may be initiated by either Agency through an exchange of correspondence and the results shall be approved by both Agencies.

1.4. This Arrangement is subject to review at any time at the request of either Agency, the U.S. Department of State or the Department of Foreign Affairs and International Trade of Canada.

2. Sharing and Protection Zones

The Agencies shall use the following definitions of Sharing Zones, Protection Zones and Sectors when interpreting this Arrangement:

2.1. **Sharing Zone I**

This Sharing Zone is the area adjacent to the United States-Canada border East of

longitude 121° 30' W. and extending a distance of 100 km within either country. However, within Sharing Zone I the following special geographic areas are recognized:

a) In the Great Lakes area there are significant land areas that are within 100 km of the international border between the United States and Canada, but further than 100 km from any land mass of the other country. These areas contain several significant population centers that would benefit from additional spectrum if the lake shores were considered for purposes of sharing. With this in mind, the following cities shall be considered as falling outside of Sharing Zone I but inside the Protection Zone as defined in section 2.4 below: in the United States, the cities of Akron, Ohio; Youngstown, Ohio; and Syracuse, New York; and in Canada, the cities of Kitchener-Waterloo, Ontario; Peterborough, Ontario, and London, Ontario. These cities are defined in Annex B, Table B4 as an area with the given center coordinates and encompassing a circle of 30 km radius.

b) Sector 1 and Sector 2, as defined in Section 4 below, are recognized as special geographic areas within Sharing Zone I.

2.2. Sharing Zone II

This Sharing Zone is the area adjacent to the United States-Canada border between 121° 30' and 127° W. longitude and extending a distance of 140 km within either country.

2.3. Sharing Zone III

This Sharing Zone is the area adjacent to the Alaska-British Columbia/Yukon Territory border and extending a distance of 100 km within either country.

2.4. Protection Zones

The Protection Zones are the areas adjacent to Sharing Zones I and III and extending from 100 km to 140 km away from the United States-Canada border within both countries as well as the areas defined in Annex B, Table B4.

3. General Sharing Arrangement

3.1. Channeling Arrangements

Within the Sharing Zones and Protection Zones, the Agencies shall use the spectrum on the basis of a paired frequency channeling plan with base station transmitters in the frequency band 768-775 MHz and mobile station transmitters in the frequency band 798-805 MHz. In the bands 775-776 MHz and 805-806 MHz, the Agencies may use unpaired or paired frequencies. A mobile station may also transmit on any frequency assigned to its associated base station. Base station to base station transmissions may occur in either frequency band 768-776 MHz or frequency band 798-806 MHz.[1]

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[1] For purposes of this arrangement, base to base transmissions include fixed (repeater) and fixed (control) operations.

The channels and blocks referred to in this Arrangement are defined in Annex A.

3.2. **Distribution/Allotment of Frequencies**

The frequency bands covered by this Arrangement shall be shared along the border, as indicated below. Each Agency may use its allotted portions of spectrum, subject to not causing harmful interference to assignments beyond the allotted frequency band edges and subject to the technical limits described in section 5.

3.2.1. Canada

In the Sharing Zones, except as specified in section 4, Canada has primary use of the channels and blocks listed in Annex A, Tables 1a and 1b in the frequency bands 768 to 776 MHz and 798 to 806 MHz.

3.2.2. United States

3.2.3. In the Sharing Zones, except as specified in section 4, the United States has primary use of the channels and blocks listed in Annex A, Tables 2a and 2b in the frequency bands 768 to 776 MHz and 798 to 806 MHz.

3.2.4. Shared Channels

(a) Interoperability Channels

The following paired channels shall be available as public safety interoperability channels.[2] These channels shall be available for each Agency's use in all areas. Usage of these channels in the sharing zones may be locally coordinated in accordance with the interoperability requirements of the Canadian and U.S. licensees.

Base/Mobile Interoperability Channels		
(base/mobile)	**To**	**(base/mobile)**
23 / 983	To	24 / 984
39 / 999	To	40 / 1000
63 / 1023	To	64 / 1024
79 / 1039	To	80 / 1040
103 / 1063	To	104 / 1064
119 / 1079	To	120 / 1080
143 / 1103	To	144 / 1104
159 / 1119	To	160 / 1120
183 / 1143	To	184 / 1144
199 / 1159	To	200 / 1160

[2] Interoperability channels shall be used only for coordination of tactical communications between different public safety agencies, within a single public safety agency, or for other similar emergency communications.

Base/Mobile Interoperability Channels		
(base/mobile)	To	(base/mobile)
223 / 1183	To	224 / 1184
239 / 1199	To	240 / 1200
263 / 1223	To	264 / 1224
279 / 1239	To	280 / 1240
303 / 1263	To	304 / 1264
319 / 1279	To	320 / 1280
641 / 1601	To	642 / 1602
657 / 1617	To	658 / 1618
681 /1641	To	682 / 1642
697 / 1657	To	698 / 1658
721 / 1681	To	722 / 1682
737 / 1697	To	738 / 1698
761 / 1721	To	762 / 1722
777 / 1737	To	778 / 1738
801 / 1761	To	802 / 1762
817 / 1777	To	818 / 1778
841 / 1801	To	842 / 1802
857 / 1817	To	858 / 1818
881 / 1841	To	882 / 1842
897 / 1857	To	898 / 1858
921 / 1881	To	922 / 1882
937 / 1897	To	938 / 1898

(b) Low Power Channels

The following channels shall be available as narrowband low power channels: 1 to 12, 949 to 960, 961 to 972, and 1909 to 1920. These channels shall be available for mobile operations only. No fixed station shall be allowed on these channels. These channels shall be available for each Agency's use on an unprotected basis. Operation on these low power channels shall be limited to a maximum ERP of 2 watts.

3.2.5. Protection Zones

In the Protection Zones, each Agency has primary use of all the channels and blocks in the frequency bands 768 to 776 MHz and 798 to 806 MHz.

3.3. **Use of the 768 to 776 MHz and 798 to 806 MHz bands Outside the Sharing and Protection Zones**

Beyond 140 km from the border, the Agencies shall have primary use of these bands.

3.4 In the event that a station in one country causes harmful interference to a station in the other country, both Agencies shall take appropriate action to eliminate such interference.

4. *Special Sharing Arrangements*

In recognition of particular demographic circumstances, the Agencies agree on the unequal division of spectrum between Canada and the United States in the following two sectors of Sharing Zone I:

4.1. Sector 1

Sector 1 is defined to be the portion of Sharing Zone I in the United States and Canada bounded on the West by 85° W. longitude and on the East in Canada by 81° W. longitude and in the United States by 80° 30' W. longitude.

In this Sector, Canada shall have primary use of the frequencies listed in Annex A, Tables 3a and 3b. In this Sector, the United States shall have primary use of the frequencies listed in Annex A, Tables 4a and 4b. In this Sector, Canada and the United States shall have shared use of the channels listed in section 3.2.4.

4.2. Sector 2

Sector 2 is defined to be the portion of Sharing Zone I in the United States and Canada bounded on the East by 71° W. longitude and on the West in Canada by 81° W longitude and in the United States by 80° 30' W. longitude.

In this Sector, Canada shall have primary use of the frequencies listed in Annex A, Tables 5a and 5b. In this Sector, the United States shall have primary use of the frequencies listed in Annex A, Tables 6a and 6b. Within an area of 30 km radius from the centre city coordinates of London, Ontario, 42° 59' N. 81° 14' W., Canada shall have primary use the frequencies as defined in section 2.1 (protection zone). In this Sector, Canada and the United States shall have shared use of the channels listed in section 3.2.4.

5. *Technical Limits*

5.1. Within Sharing Zones I (including Sectors 1 and 2) and III, the Agencies may use their allotted portions of spectrum, subject to the Effective Radiated Power (ERP) and Effective Antenna Height (EAH) limits of Annex B, Table B1.

5.2. Within Sharing Zones II, the Agencies may use their allotted portions of spectrum, subject to the Effective Radiated Power (ERP) and Antenna Height Above Mean Sea Level (AMSL) limits of Annex B, Table B2.

5.3. Each Agency shall have primary use of the 768-776 MHz and 798-806 MHz bands within the Protection Zone in its respective country, subject to the condition that base stations not exceed the maximum Effective Radiated Power (ERP) and effective Antenna Height (EAH) limits of Annex B, Table B1.

5.4. Within the Sharing and Protection Zones, calculation of the limits on Effective Radiated Power (ERP) shall be based on the power radiated toward the horizon in the direction of the common border.

5.5. Each Agency may authorize stations which exceed the ERP limits specified in sections 5.1 through 5.4, provided the signal from such a station does not exceed a maximum power flux density (pfd) limit of -107dB(W/m^2)/25 kHz at and beyond the border and a maximum ERP of 500 watts in the direction of the common border. If the border falls over water, the pfd limit shall apply at the shore beyond the border.

(a) The Agencies shall require applicants or licensees under this provision to calculate the pfd described in section 5.5 using good engineering practice and generally accepted terrain-sensitive propagation models (with location and time variables of 10% and standard 3 arc-second digitized terrain data). Upon request by either Agency, the other Agency shall provide all data and calculations for determining compliance with this Arrangement

(b) In the event that the actual pfd at or beyond the border exceeds the value described in section 5.5, it is the responsibility of the licensee to bring the station's actual pfd into compliance with section 5.5 or bring the station into compliance with the power limits described in sections 5.1 through 5.4.

6. *Coordination Necessitated by the Special Sharing Arrangements*

6.1. As a result of the division of spectrum described in sections 4.1 and 4.2, portions of the bands allotted to both countries under this Arrangement overlap. Therefore, the Agencies shall coordinate the proposed frequency assignments in the overlapping portions in those bands, as described in sections 6.2 and 6.3 below, in accordance with the procedures specified in Arrangement A annexed to the Above 30 Agreement.

6.2. Coordination shall be required for assignments on the frequencies listed Annex A, Tables 7a and 7b in the following areas (see Annex C, Figure 1):

a) The geographical area in Canada enclosed by the United States-Canada border, the meridian 71° W.; and the line beginning at the intersection of 72° W. and the United States-Canada border, thence running North along meridian 72° W. to the intersection of 45° 45' N., thence running East along 45° 45' N. to the meridian 71° W., and

b) The geographical area in the United States enclosed by the United States-Canada border, the meridian 71° W.; and the line beginning at the intersection of 44° 25' N., 71° W., thence running by great circle arc to the intersection of 45° N., 70° W., thence North along meridian 70° W. to the intersection of 45° 45' N., thence running West along 45° 45' N. to the intersection of the United States-Canada border.

6.3. Coordination shall be required for assignments on the frequencies listed Annex A, Tables 8a and 8b in the following areas (see Annex C, Figure 2):

a) The geographical area in Canada enclosed by the meridian of 81° W. longitude, the arc of a circle of 100 km radius centered at 41° 58'N. latitude and 80° 30' W. longitude at the southern shore of Lake Erie and drawn clockwise from the northerly intersection with 81° W. longitude to intersect the United States-Canada border East of 80° 30' W., and the United States-Canada border; and

b) The geographical area in the United States enclosed by the meridian of 81° W. longitude, the arc of a circle of 100 km radius centered at 42° 39' 30" N. latitude and 81° W. longitude at the northern shore of Lake Erie and drawn clockwise from the southerly intersection with 80° 30' W. longitude to intersect the United States-Canada border West of 81° W., and the United States-Canada border.

Within an area of 30 km radius from the centre city coordinates of London, Ontario, 42° 59' N. 81° 14' W., Canada has primary access as defined in section 2.1 (protection zone).

7. Use of Frequencies Allotted to One Administration by the Other Administration

7.1 Frequencies allotted for primary use of one Agency may be assigned by the other Agency for use within the sharing zones in its country under the following conditions:

(a) The maximum power flux density (pfd) of the signal at and beyond the border of the primary user's country does not exceed -124 dB(W/m^2)/25 kHz.

(1) The Agencies shall require applicants or licensees under this provision to calculate the pfd described in section 7.1(a) using good engineering practice and generally accepted terrain-sensitive propagation models (with location and time variables of 10% and standard 3 arc-second digitized terrain data). Upon request by either Agency, the other Agency shall provide all data and calculations for determining compliance with this Arrangement.

(2) In the event that the measured pfd at or beyond the border exceeds the

value described in section 7.1(a), it is the responsibility of the licensee to bring the station's pfd into compliance with section 7.1(a).

(b) Stations authorized under this provision shall be considered as secondary and shall neither be granted protection against harmful interference from stations that have primary use of their authorized frequency, nor shall they cause harmful interference to stations having primary use of their authorized frequency, regardless of whether they meet the pfd values specified in 7.1 (a) above.

(c) Mobile stations exceeding 5 watts transmitter power output (TPO) shall not be operated in frequencies allotted for primary use of the other Agency within 30 km of the common border.

(d) Beyond 30 km of the common border, mobile stations operating in frequencies allotted for primary use of the other Agency must not exceed the pfd value specified in 7.1 (a).

(e) The documentation issued by each Agency authorizing such stations to use these frequencies shall include a clause stating that such authorization is subject to the following conditions:

(1) In the event that the measured signal at or beyond the border is found to exceed -124 dB(W/m^2)/25 kHz, the signal level shall be reduced accordingly;

(2) In the event that harmful interference occurs to any station that has primary use of the authorized frequency, regardless of signal strength, the licensee shall take immediate action to eliminate such interference. The Agency granting the authorization for secondary use shall ensure that remedial action is taken to resolve the harmful interference, up to and including revocation of the authorization.

8. *Information Exchange*

8.1 To facilitate the coordination requirements of this Arrangement, the Agencies shall either exchange information including, but not limited to: (1) licensee name(s); (2) licensed service areas; and (3) licensee point(s) of contact; or means to obtain the above information.

8.2 When necessary, the Agencies shall provide information to their respective licensees to facilitate the coordination requirements of this Arrangement.

8.3 To facilitate cross-border coordination between licensees, the Agencies shall encourage licensees to exchange data as listed in Annex D to this Arrangement.

ANNEX A

DISTRIBUTION/ALLOTMENT OF FREQUENCIES FOR GENERAL AND SPECIAL SHARING ARRANGEMENTS

Channelling Plan

Channels shall be 6.25 kHz wide for a total of 1920 channels. The channels can be combined. The frequencies corresponding to the lower and upper band edge of the channel number are defined by the following formulas, where n is the channel number:

Channel Number	Lower Edge (MHz)	Upper Edge (MHz)
1 to 960	$f_n = 769.0 + (0.00625)*(n-1)$ where n = 1 to 960	$f_n = 769.0 + (0.00625)*(n)$ where n = 1 to 960
961 to 1920	$f_n = 799.0 + (0.00625)*(n-961)$ where n = 961 to 1920	$f_n = 799.0 + (0.00625)*(n-960)$ where n = 961 to 1920

A1. In the Sharing Zones, except Sectors 1 and 2, Canada shall have primary use of the following channels and blocks:

Table 1a – Canada Primary Channels in Sharing Zones (except Sectors 1 and 2)

Base/Mobile Channels		
(base/mobile)	To	(base/mobile)
181 / 1141	To	182 / 1142
185 / 1145	To	198 / 1158
221 / 1181	To	222 / 1182
225 / 1185	To	238 / 1198
261 / 1221	To	262 / 1222
265 / 1225	To	278 / 1238
301 / 1261	To	302 / 1262
305 / 1265	To	318 / 1278
327 / 1287	To	634/ 1594
643 / 1603	To	656 / 1616
659 / 1619	To	660 / 1620
683 / 1643	To	696 / 1656
699 / 1659	To	700 / 1660
723 / 1683	To	736 / 1696
739 / 1699	To	740 / 1700
763 / 1723	To	776 / 1736
779 / 1739	To	780 / 1740

Table 1b – Canada Primary Blocks in Sharing Zones (except Sectors 1 and 2)

Base	Mobile
768 to 768.50 MHz	798 to 798.50 MHz
775 to 775.50 MHz	805 to 805.50 MHz

A2. In the Sharing Zones, except Sectors 1 and 2, the United States shall have primary use of the following channels and blocks:

Table 2a – U.S. Primary Channels in Sharing Zones (except Sectors 1 and 2)

Base/Mobile Channels		
(base/mobile)	To	(base/mobile)
13 / 973	To	22 / 982
25 / 985	To	38 / 998
41 / 1001	To	62 / 1022
65 / 1025	To	78 / 1038
81 / 1041	To	102 / 1062
105 / 1065	To	118 / 1078
121 / 1081	To	142 / 1102
145 / 1105	To	158 / 1118
161 / 1121	To	180 / 1140
201 / 1161	To	220 / 1180
241 / 1201	To	260 / 1220
281 / 1241	To	300 / 1260
321 / 1281	To	326 / 1286
635 / 1595	To	640 / 1600
661 / 1621	To	680 / 1640
701 / 1661	To	720 / 1680
741 / 1701	To	760 / 1720
781 / 1741	To	800 / 1760
803 / 1763	To	816 / 1776
819 / 1779	To	840 / 1800
843 / 1803	To	856 / 1816
859 / 1819	To	880 / 1840
883 / 1843	To	896 / 1856
899 / 1859	To	920 / 1880
923 / 1883	To	936 / 1896
939 / 1899	To	948 / 1908

Table 2b – U.S. Primary Blocks in Sharing Zones (except Sectors 1 and 2)

Base	Mobile
768.50 to 769 MHz	798.50 to 799 MHz
775.50 to 776 MHz	805.50 to 806 MHz

A3. In Sector 1, Canada shall have primary use of the following channels and blocks:

Table 3a – Canada Primary Channels in Sector 1

Base/Mobile Channels		
(base/mobile)	To	(base/mobile)
305 / 1265	To	318 / 1278
429 / 1389	To	532 / 1492
643 / 1603	To	656 / 1616

Table 3b – Canada Primary Channels and Blocks in Sector 1

Base	Mobile
768 to 768.15 MHz	798 to 798.15 MHz
775 to 775.15 MHz	805 to 805.15 MHz

A4. In Sector 1, the United States shall have primary use of the following channels and blocks:

Table 4a – U.S. Primary Channels in Sector 1

Base/Mobile Channels		
(base/mobile)	To	(base/mobile)
13 / 973	To	22 / 982
25 / 985	To	38 / 998
41 / 1001	To	62 / 1022
65 / 1025	To	78 / 1038
81 / 1041	To	102 / 1062
105 / 1065	To	118 / 1078
121 / 1081	To	142 / 1102
145 / 1105	To	158 / 1118
161 / 1121	To	182 / 1142
185 / 1145	To	198 / 1158
201 / 1161	To	222 / 1182
225 / 1185	To	238 / 1198
241 / 1201	To	262 / 1222
265 / 1225	To	278 / 1238
281 / 1241	To	302 / 1262
321 / 1281	To	428 / 1388
533 / 1493	To	640 / 1600
659 / 1619	To	680 / 1640
683 / 1643	To	696 / 1656
699 / 1659	To	720 / 1680
723 / 1683	To	736 / 1696
739 / 1699	To	760 / 1720
763 / 1723	To	776 / 1736
779 / 1739	To	800 / 1760
803 / 1763	To	816 / 1776
819 / 1779	To	840 / 1800
843 / 1803	To	856 / 1816
859 / 1819	To	880 / 1840
883 / 1843	To	896 / 1856
899 / 1859	To	920 / 1880
923 / 1883	To	936 / 1896
939 / 1899	To	948 / 1908

Table 4b – U.S. Primary Blocks in Sector 1

Base	Mobile
768.15 to 769 MHz	798.15 to 799 MHz
775.15 to 776 MHz	805.15 to 806 MHz

A5a. In Sector 2, Canada shall have primary use of the following channels and blocks:

Table 5a – Canada Primary Channels in Sector 2

Base/Mobile Channels		
(base/mobile)	To	(base/mobile)
101 / 1061	To	102 / 1062
105 / 1065	To	118 / 1078
141 / 1101	To	142 / 1102
145 / 1105	To	158 / 1118
181 / 1141	To	182 / 1142
185 / 1145	To	198 / 1158
211 / 1171	To	222 / 1182
225 / 1185	To	238 / 1198
241 / 1201	To	262 / 1222
265 / 1225	To	278 / 1238
281 / 1241	To	302 / 1262
305 / 1265	To	318 / 1278
321 / 1281	To	640/ 1600
643 / 1603	To	656 / 1616
659 / 1619	To	680 / 1640
683 / 1643	To	696 / 1656
699 / 1659	To	720 / 1680
723 / 1683	To	736 / 1696
739 / 1699	To	750 / 1710
763 / 1723	To	776 / 1736
779 / 1739	To	780 / 1740
803 / 1763	To	816 / 1776
819 / 1779	To	820 / 1780
843 / 1803	To	856 / 1816
859 / 1819	To	860 / 1820

Table 5b – Canada Primary Blocks in Sector 2

Base	Mobile
768 to 768.7 MHz	798 to 798.7 MHz
775 to 775.7 MHz	805 to 805.7 MHz

A6a. In Sector 2, the United States shall have primary use of the following channels and blocks:

Table 6a – U.S. Primary Channels in Sector 2

Base/Mobile Channels		
(base/mobile)	To	(base/mobile)
13 / 973	To	22 / 982
25 / 985	To	38 / 998
41 / 1001	To	62 / 1022
65 / 1025	To	78 / 1038
81 / 1041	To	100 / 1060
121 / 1081	To	140 / 1100
161 / 1121	To	180 / 1140
201 / 1161	To	210 / 1170
751 / 1711	To	760 / 1720
781 / 1741	To	800 / 1760
821 / 1781	To	840 / 1800
861 / 1821	To	880 / 1840
883 / 1843	To	896 / 1856
899 / 1859	To	920 / 1880
923 / 1883	To	936 / 1896
939 / 1899	To	948 / 1908

Table 6b – U.S. Primary Blocks in Sector 2

Base	Mobile
768.7 to 769 MHz	798.7 to 799 MHz
775.7 to 776 MHz	805.7 to 806 MHz

A7. In the areas listed in section 6.2, the following channels shall be coordinated in accordance with the procedures specified in Arrangement A annexed to the Above 30 Agreement:

Table 7a – Channels Requiring Coordination in Areas Listed in Section 6.2

Base/Mobile Channels		
(base/mobile)	To	(base/mobile)
101 / 1061	To	102 / 1062
105 / 1065	To	118 /1078
141 / 1101	To	142 / 1102
145 / 1105	To	158 / 1118
211 / 1171	To	220 / 1180
241 / 1201	To	260 / 1220
281 / 1241	To	300 / 1260
321 / 1281	To	326 / 1286
635 / 1595	To	640 / 1600
661 / 1621	To	680 / 1640
701 / 1661	To	720 / 1680
741 / 1701	To	750 / 1710
803 / 1763	To	816 / 1776
819 / 1779	To	820 / 1790
843 / 1803	To	856 / 1816
859 / 1819	To	860 / 1820

Table 7b – Blocks Requiring Coordination in Areas Listed in Section 6.2

Base	Mobile
768.50 to 768.70 MHz	798.50 to 798.70 MHz
775.50 to 775.70 MHz	805.50 to 805.70 MHz

A8. In the areas listed in section 6.3, the following channels shall be coordinated in accordance with the procedures specified in Arrangement A annexed to the Above 30 Agreement:

Table 8a – Channels Requiring Coordination in Areas Listed in Section 6.3

Base/Mobile Channels		
(base/mobile)	To	(base/mobile)
101 / 1061	To	102 / 1062
105 / 1065	To	118 /1078
141 / 1101	To	142 / 1102
145 / 1105	To	158 / 1118
181 / 1141	To	182 / 1142
185 / 1145	To	198 / 1158
211 / 1171	To	222 / 1182
225 / 1185	To	238 / 1198
241 / 1201	To	262 / 1222
265 / 1225	To	278 / 1238
281 / 1241	To	302 / 1262
321 / 1281	To	428 / 1388
533 / 1493	To	640 / 1600
659 / 1619	To	680 / 1640
683 / 1643	To	696 / 1656
699 / 1659	To	720 / 1680
723 / 1683	To	736 / 1696
739 / 1699	To	750 / 1710
763 / 1723	To	776 / 1736
779 / 1739	To	780 / 1740
803 / 1763	To	816 / 1776
819 / 1779	To	820 / 1790
843 / 1803	To	856 / 1816
859 / 1819	To	860 / 1820

Table 8b – Blocks Requiring Coordination in Areas Listed in Section 6.3

Base	Mobile
768.15 to 768.70 MHz	798.15 to 798.70 MHz
775.15 to 775.70 MHz	805.15 to 805.70 MHz

ANNEX B

LIMITS OF EFFECTIVE RADIATED POWER AND ANTENNA HEIGHT FOR GENERAL SHARING ARRANGEMENTS

Effective Radiated Power (ERP) is defined as the product of the power supplied to the antenna and its gain relative to a half-wave dipole in a given direction.

B1. For base stations in Sharing Zones I (including Sectors 1 and 2) and III, and the Protection Zones, Table B1 lists the limits of Effective Radiated Power (ERP) corresponding to the Effective Antenna Height (EAH) ranges shown. In this case, Effective Antenna Height is calculated by subtracting the Assumed Average Terrain Elevation given in Table B3 from the antenna height above mean sea level.

Table B1
Limits of Effective Radiated Power (ERP) Corresponding to Effective Antenna Heights of Base Stations in Sharing Zones I (including Sectors 1 and 2) and III, and the Protection Zones

Effective Antenna Height (EAH) in Metres	ERP Watts (Maximum)
Up to 153	500
Above 153 to 306	125
Above 306 to 458	40
Above 458 to 610	20
Above 610 to 915	10
Above 915 to 1067	6
Above 1067	5

B2. For base stations in Sharing Zone II, Table B2 lists the limits of Effective Radiated Power (ERP) corresponding to the antenna height above mean sea level (AMSL) ranges shown.

Table B2
Limits of Effective Radiated Power (ERP) Corresponding to Antenna Heights Above Mean Sea Level of Base Stations in Sharing Zone II

Antenna Height Above Mean Sea Level (AMSL) in Metres	ERP Watts (Maximum)
Up to 504	500
Above 504 to 610	350
Above 610 to 763	200
Above 763 to 915	140
Above 915 to 1067	100
Above 1067 to 1220	75
Above 1220 to 1372	70
Above 1372 to 1523	65
Above 1523	5

B3. Table B3 lists the values of Assumed Average Terrain Elevations (AATE) within the Sharing and Protection Zones on both sides of the United States-Canada border.

EAH = Antenna Height Above Mean Sea Level - AATE

Table B3
Values of Assumed Average Terrain Elevation within the Sharing and Protection Zones on Both Sides of the United States - Canada Border

Longitude (φ) (°West)	Latitude (Ω) (°North)	Assumed Average Terrain Elevation			
		United States		Canada	
		Feet	Metres	Feet	Metres
$65 \leq \Phi < 69$	$\Omega < 45$	0	0	0	0
"	$45 \leq \Omega < 46$	300	91	300	91
"	$\Omega \geq 46$	1000	305	1000	305
$69 \leq \Phi < 73$	All	2000	609	1000	305
$73 \leq \Phi < 74$	"	500	152	500	152
$74 \leq \Phi < 78$	"	250	76	250	76
$78 \leq \Phi < 80$	$\Omega < 43$	250	76	250	76
"	$\Omega \geq 43$	500	152	500	152
$80 \leq \Phi < 90$	All	600	183	600	183
$90 \leq \Phi < 98$	"	1000	305	1000	305
$98 \leq \Phi < 102$	"	1500	457	1500	457
$102 \leq \Phi < 108$	"	2500	762	2500	762
$108 \leq \Phi < 111$	"	3500	1066	3500	1066
$111 \leq \Phi < 113$	"	4000	1219	3500	1066
$113 \leq \Phi < 114$	"	5000	1524	4000	1219
$114 \leq \Phi < 121.5$	"	3000	914	3000	914
$121.5 \leq \Phi$ 127	"	0	0	0	0
$\Phi \geq 127$	$54 \leq \Omega < 56$	0	0	0	0
"	$56 \leq \Omega < 58$	500	152	1500	457
"	$58 \leq \Omega < 60$	0	0	2000	609
"	$60 \leq \Omega < 62$	4000	1219	2500	762
"	$62 \leq \Omega < 64$	1600	488	1600	488
"	$64 \leq \Omega < 66$	1000	305	2000	609
"	$66 \leq \Omega < 68$	750	228	750	228
"	$68 \leq \Omega < 69.5$	1500	457	500	152
"	$\Omega \geq 69.5$	0	0	0	0

B4. Table B4 lists cities in the United States and Canada that, for the purposes of this agreement, shall be considered as falling outside of Sharing Zone I but within the Protection Zone. These cities are defined as circles with a 30 km radius around the center coordinates listed.

Table B4
Cities in the United States and Canada that for purposes of this arrangement shall be considered as falling outside of Sharing Zone I but within the Protection Zone

Location	Coordinates (NAD83)	
	Latitude	Longitude
Akron, Ohio	41° 05' 00.2" N.	81° 30' 39.4" W.
Youngstown, Ohio	41° 05' 57.2" N.	80° 39' 01.3" W.
Syracuse, New York	43° 03' 04.2" N.	76° 09' 12.7" W.
Kitchener-Waterloo, Ontario	43° 27' 30.2" N.	80° 29' 59.4" W.
Peterborough, Ontario	44° 18' 00.2" N.	78° 18' 59.2" W.
London, Ontario	42° 59' 00.0" N.	81° 14' 00.0 W.

ANNEX C

BAND OVERLAP COORDINATION AREAS

AREAS IN WHICH COORDINATION IS REQUIRED

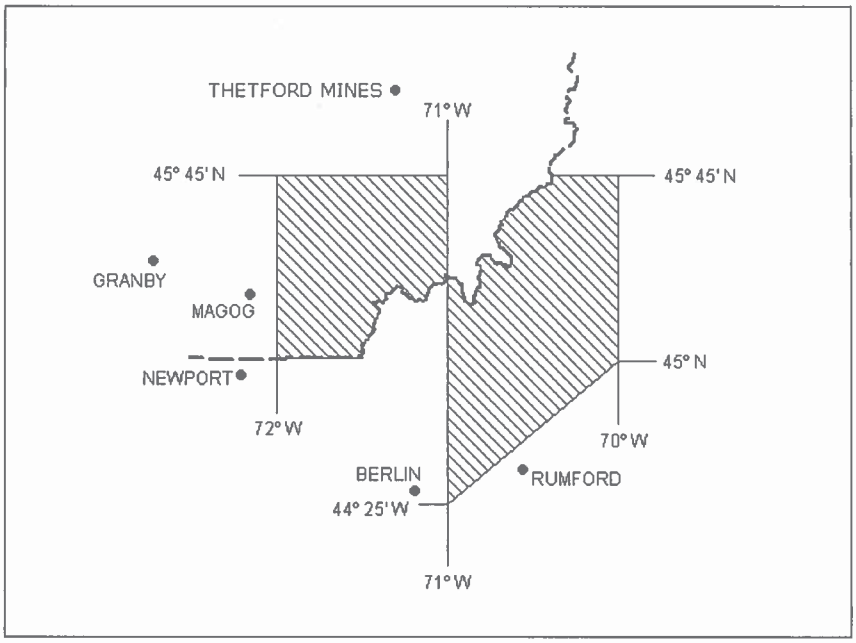

Figure 1

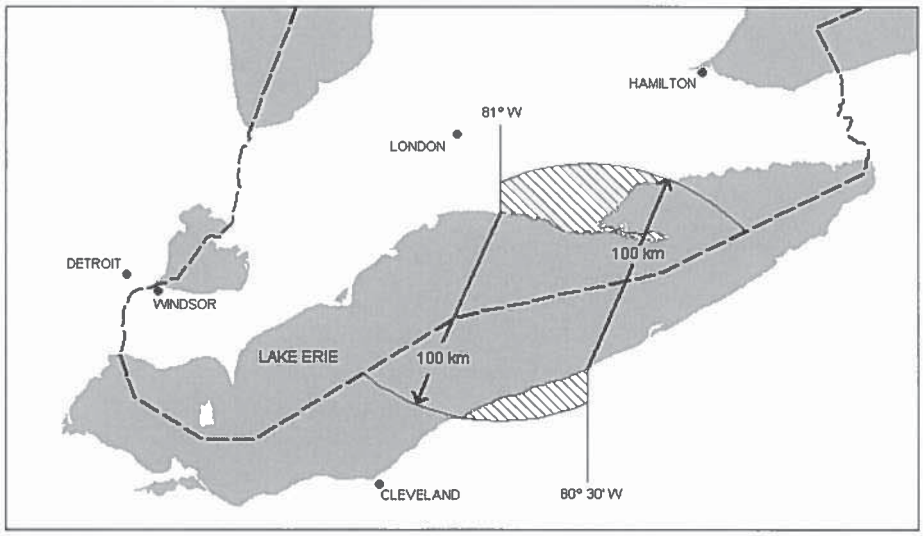

Figure 2

ANNEX D

PARAMETERS FOR COORDINATION

Licensee information (Corporate name/Mailing address/Phone/Fax/Email address)
Location of transmitter (Community/State/Province)
Geographical coordinates of transmitting antenna (NAD83)
Equivalent Radiated Power (ERP) (dBW)
Ground elevation and antenna height above ground (m)
Center frequency (MHz)
Polarization
Antenna pattern/tabulation of the pattern
Azimuth of the maximum antenna gain
Bandwidth and emission designation

ARRANGEMENT R

SHARING ARRANGEMENT BETWEEN THE DEPARTMENT OF INDUSTRY OF CANADA AND THE FEDERAL COMMUNICATIONS COMMISSION OF THE UNITED STATES OF AMERICA CONCERNING THE USE OF THE FREQUENCY BAND 3650 TO 3700 MHz BY THE FIXED AND MOBILE SERVICES ALONG THE CANADA-UNITED STATES BORDER

The Department of Industry of Canada (Industry Canada), and the Federal Communications Commission of the United States of America (FCC), hereinafter referred to as the "Agencies",

Have agreed to the following:

1. **Scope**

1.1. This Arrangement is done pursuant to the *Agreement concerning the coordination and use of radio frequencies above thirty megacycles per second*, with annex, done at Ottawa October 24, 1962, as amended, and governs the sharing and coordination of radio frequency spectrum for the establishment and operation of fixed and mobile radio services operating in the band 3650-3700 MHz along the Canada-United States border.

1.2. This Arrangement is subject to review at any time at the request of either Agency, the U.S. Department of State or the Department of Foreign Affairs and International Trade of Canada.

2. **Sharing Zone**

2.1. The sharing zone is adjacent to the Canada-United States border and is defined as follows:

a) 56 km on each side of the border for any radio station utilizing an antenna of which any part of the main beam, as determined by the half power points, looks within the 200° sector toward the border; or

b) 8 km on each side of the border for any radio station utilizing an antenna of which the entire main beam, as determined by the half power points, looks within the 160° sector away from the border.

3. General Sharing Arrangement

The frequency bands covered by this Arrangement are to be shared along the border, as indicated below.

3.1 Use of the band 3650-3675 MHz within the sharing zone

3.1.1 Canada primary band: 3650-3662.5 MHz

In the sharing zone within Canada, Canada has primary use of the frequency band 3650-3662.5 MHz.

3.1.2 United States primary band: 3662.5-3675 MHz

In the sharing zone within the United States, the United States has primary use of the frequency band 3662.5-3675 MHz.

3.2 Use of the band 3650-3700 MHz within the sharing zone

Canada and the United States shall have use of the entire band 3650-3700 MHz for radio stations employing "unrestricted contention-based protocols" in accordance with Section 5. In the 3675-3700 sub-band, stations in both countries operate on a equal basis with respect to radio stations of the other country and on the basis that they shall neither cause interference to, nor claim protection from, radio stations in the other country.

3.3 Use of the 3650-3700 MHz band outside the sharing zone

Beyond the sharing zone defined in Section 2 of this Arrangement, both countries have full use of this band. Nonetheless, in the event that radio stations operating in these bands experience harmful interference, both Agencies shall take appropriate action to eliminate such interference.

4. Use of Frequencies Allotted to One Administration by the Other Administration in the Band 3650-3675 MHz

4.1. Frequencies allotted for primary use, as described in Section 3.1, of one Agency may be assigned by the other Agency for use in its country within the sharing zone under the following conditions:

a) The maximum power flux density (pfd) at and beyond the border of the primary user's country does not exceed -110 dBW/m^2/MHz. In cases where both the U.S.-Canada border and the neighbouring service area lie within a body of water, the power flux density shall be calculated at the shoreline of the neighbouring service area.

b) In calculating the pfd, good engineering practice and generally accepted terrain-sensitive propagation models, with a location and time variability of 50% and 10%, respectively and at least standard 3 arc-second digitized terrain data, shall be used. All data and calculations used in determining compliance with this Arrangement shall be disclosed upon request by either Agency.

c) Radio stations under this provision shall be considered as secondary with respect to stations of the other country having primary use of the spectrum and shall neither cause interference to, nor claim protection from, radio stations having primary use of the spectrum in the other country, regardless of whether or not they meet the pfd values specified in section 4.1 a) above.

4.2 Either Agency may initiate special coordination with the other Agency through an exchange of correspondence concerning exceptional circumstances in which the technical conditions stated in section 4.1 must be exceeded for more efficient operation of the services authorized under this Arrangement. Such variation(s) may be authorized only upon the approval of both Agencies.

5. Equipment using "Unrestricted Contention-based Protocols" in the Band 3650-3700 MHz

5.1 For the purposes of this Arrangement, contention-based protocols are defined as follows:

5.1.1 In general, contention-based protocols allow multiple users to share the same spectrum by defining the events that must occur when two or more radio stations attempt to simultaneously access the same channel and establishing rules by which a radio station provides reasonable opportunities for other radio stations to operate. Such a protocol may consist of procedures for initiating new transmissions, procedures for determining the state of the channel (available or unavailable), and procedures for managing retransmissions in the event of a busy channel.

Unrestricted contention-based protocols function to prevent interference with radio stations even when those radio stations employ different or dissimilar protocols, whereas restricted contention-based protocols generally only function to prevent interference to radio stations employing the same protocol.

5.2 The Agencies may only authorize radio stations using unrestricted contention-based protocols to operate on a secondary basis with respect to radio stations of the other country having primary use of the spectrum in accordance with section 3.1 and on the basis that they shall neither cause interference to, nor claim protection from, radio stations having primary use of the spectrum in the other country.

6. Technical Limits Applicable in the Sharing Zone

6.1. The Agencies shall require, to the extent possible, licensees to take full advantage of interference mitigation techniques such as antenna directivity, polarization, frequency selection, shielding, site selection, power control and/or the use of contention-based protocols to facilitate the deployment, operation and compatibility of radio stations on each side of the border.

6.2. In the sharing zone, the Agencies shall authorize frequency assignments up to a maximum equivalent isotropic radiated power (EIRP) of 25 W per 25 MHz for base and fixed radio stations. In any event, the peak EIRP power density shall not exceed 1 Watt in one megahertz of spectrum.

6.3. In addition to the provisions in section 6.2, radio stations operating in the 3650-3700 MHz band that emit multiple directional beams simultaneously or sequentially, for the purpose of directing signals to individual receivers or to groups of receivers may only be authorized by the Agencies provided that these operations comply with the following:

a) Different information must be transmitted to each receiver;

b) If the radio station employs an antenna system that emits multiple directional beams but does not emit multiple directional beams simultaneously, the total output power conducted to the array or arrays that comprise the device, i.e., the sum of the power supplied to all antennas, antenna elements, staves, etc. and summed across all carriers or frequency channels, shall not exceed the limits specified in section 6.2 of this section, as applicable. The directional antenna gain shall be computed as follows:

   i) the directional gain, in dBi, shall be calculated as the sum of 10 log (number of array elements or staves) plus the directional gain, in dBi, of the individual element or stave having the highest gain;
   ii) a lower value for the directional gain than that calculated in section 6.3.b)(i) of this section shall be accepted if sufficient evidence is presented, e.g., due to shading of the array or coherence loss in the beam forming;

c) If the radio station employs an antenna that operates simultaneously on multiple directional beams using the same or different frequency channels and if transmitted beams overlap, the power shall be reduced to ensure that the aggregate power from the overlapping beams does not exceed the limit specified in section 6.3.b) of this section. In addition, the aggregate power transmitted simultaneously on all beams shall not exceed the limits specified in section 6.3.b) of this section by more than 8 dB;

d) Radio stations that emit a single directional beam shall operate under the provisions of section 6.3.b) of this section.

6.4 Mobile and portable radio stations are limited to 1 W EIRP per 25 MHz. In any event, the peak EIRP density shall not exceed 40 milliwatts in one megahertz of spectrum.

7. Protection of Existing Fixed Satellite Service (FSS) Earth Stations

7.1 It is recognized that Industry Canada and the FCC have FSS earth stations licensed in the band 3650-3750 MHz at specific locations which require protection from fixed and mobile radio stations. In light of this, it is agreed that if either country wishes to deploy terrestrial stations in this band which are located within 150 km of these existing fixed-satellite service (FSS) earth stations, coordination must first be carried out between our two agencies. Annex A to this arrangement provides information regarding the location of existing FSS stations within 150 km of the Canada/US border which must be protected.

8. Information Exchange

To facilitate the sharing requirements of this Arrangement, the Agencies shall exchange information including, but not limited to: (1) licensee name(s); (2) licensee radio station locations (for fixed stations); and (3) licensee point(s) of contact; or shall provide to one another alternative means to obtain that information.

Annex A

Location of Existing FSS Stations in the Band 3650-3700 MHz Within 150 km of the Canada/US Border Which Require Continued Protection

USA

Andover, ME	44 38 01N 070 41 51W (NAD83)
Brewster, WA	48 08 51N 119 41 29W (NAD83)

Canada

Weir, QC	45 56 40N 074 31 58W (NAD83)

FEDERAL COMMUNICATIONS COMMISSION

JULIUS GENACHOWSKI
CHAIRMAN

May 10, 2013

Ms. Kelly Gillis
Senior Assistant Deputy Minister
Spectrum, Information Technologies and Telecommunications
Industry Canada
Jean Edmonds Tower North
300 Slater Street
Ottawa, Ontario, Canada K1A 0C8

Dear Ms. Gillis:

Thank you for your letter of May 1, 2013, and the attached drafts of Arrangements H through N inclusive, Q, and R regarding the coordination of telecommunications services in a number of frequency bands along our common border. In response, I can confirm that the Federal Communications Commission concurs with the proposals set forth in your letter, and agree that the content of those proposals is effective as of the date of this letter.

Sincerely,

Julius Genachowski

445 12TH STREET S.W. WASHINGTON, D.C. 20554 • 202-418-1000

Certification/Notification to Tribal Nations

I hereby certify that a copy of the Region 19 700MHz Amended Plan (1CD) has been sent to the ten (10) tribal nations within Region 19 (New England) for review and comment (see attached list of Tribal Nations in New England). The Region 19 Amended Plan was mailed to each of the Tribal Nations on June 10, 2015. Region 19 committee members determined that a 30 business day period (until July 24, 2015) for seeking comments/changes/additions/deletions to the Region 19 Amended Plan from each of the Tribal Nations would meet the FCC notification requirement to Tribal Nations for the planning/revision process for 700MHz Regional Planning in Region 19.

I certify that the Tribal Nations have been sent copies of the Region 19 700MHz Amended Plan and the Planning Committee sought comments.

Jerry Zurawski 6/10/15

Region 19 Chairman Date

New England Tribal Nations Contacts

Chief William Dittman
Mashantucket Pequot Tribal Nation
550 Trolley Line Blvd – P.O. Box 3202
Mashantucket, CT 06338-3202

Tribal Council
Mohegan Tribal Office
5 Crow Hill Road
Uncasville, CT 06382

Chief Edward Peter-Paul
Aroostook Band of Micmacs
7 Northern Road
Presque Isle, ME 04769

Chief Brenda Commander
Houlton Band of Maliseet Indians
88 Bell Road
Littleton, ME 04730

Passamaquoddy Tribe of Indians
Indian Township Reservation
P.O. Box 301
Princeton, ME 04668

Chief Frederick Moore, III
Passamaquoddy Tribe of Indians
Pleasant Point Reservation
P.O. Box 343
Perry, ME 04667

Chief Kirk Francis
Penobscot Indian Nation
12 Wabanaki Way
Indian Island, ME 04468

Chief Vernon Lopez
Mashpee Wampanoag Tribal Council
483 Great Neck Road, South
Mashpee, MA 02649

Chairman Tobias Vanderhoop
Wampanoag Tribe of Gay Head (Aquinnah)
20 Black Brook Road
Aquinnah, MA 02535

Chief Sachem Matthew Thomas
Narragansett Indian Tribe
P.O. Box 268
Charlestown, RI 02813

The New England 700MHz Committee Region 19

June 10, 2015

Chief William Dittman
Mashantucket Pequot Tribal Nation
350 Trolley Line Blvd - P.O. Box 3202
Mashantucket, CT 06338-3202

Re: New England Region 19 700MHz Plan Amendment

Dear Tribal Representative:

Attached is a CD of the 700MHz Plan Amendment for New England Region 19. We are seeking your comments on this Plan so we may submit it to the Federal Communications Commission (FCC). Please review and respond with comments within 30 business days of receipt.

If you have any questions, please contact me. My phone number is (860) 685-8157. My email is jerry.zarwanski@ct.gov . You may request additional copies by calling my office at (860) 685-8080. Thank you for your time and attention to this matter.

Sincerely,

Jerry Zarwanski

Jerry Zarwanski, Chairman
New England Region 19 700MHz Committee
c/o Connecticut Dept. of Emergency Services & Public Protection
Department of Statewide Emergency Telecommunications
1111 Country Club Road
Middletown, CT 06457

Attachment: CD - New England 700MHz Regional Plan Amendment, June 2015

The New England 700MHz Committee Region 19

June 10, 2015

Tribal Council
Mohegan Tribal Office
13 Crow Hill Road
Uncasville, CT 06382

Re: New England Region 19 700MHz Plan Amendment

Dear Tribal Representative:

Attached is a CD of the 700MHz Plan Amendment for New England Region 19. We are seeking your comments on this Plan so we may submit it to the Federal Communications Commission (FCC). Please review and respond with comments within 30 business days of receipt.

If you have any questions, please contact me. My phone number is (860) 685-8157. My email is jerry.zarwanski@ct.gov . You may request additional copies by calling my office at (860) 685-8080. Thank you for your time and attention to this matter.

Sincerely,

Jerry Zarwanski

Jerry Zarwanski, Chairman
New England Region 19 700MHz Committee
c/o Connecticut Dept. of Emergency Services & Public Protection
Department of Statewide Emergency Telecommunications
1111 Country Club Road
Middletown, CT 06457

Attachment: CD - New England 700MHz Regional Plan Amendment, June 2015

The New England 700MHz Committee Region 19

June 10, 2015

Chief Edward Peter-Paul
Aroostook Band of Micmacs
7 Northern Road
Presque Isle, ME 04769

Re: New England Region 19 700MHz Plan Amendment

Dear Tribal Representative:

Attached is a CD of the 700MHz Plan Amendment for New England Region 19. We are seeking your comments on this Plan so we may submit it to the Federal Communications Commission (FCC). Please review and respond with comments within 30 business days of receipt.

If you have any questions, please contact me. My phone number is (860) 685-8157. My email is jerry.zarwanski@ct.gov . You may request additional copies by calling my office at (860) 685-8080. Thank you for your time and attention to this matter.

Sincerely,

Jerry Zarwanski

Jerry Zarwanski, Chairman
New England Region 19 700MHz Committee
c/o Connecticut Dept. of Emergency Services & Public Protection
Department of Statewide Emergency Telecommunications
1111 Country Club Road
Middletown, CT 06457

Attachment: CD - New England 700MHz Regional Plan Amendment, June 2015

The New England 700MHz Committee Region 19

June 10, 2015

Chief Edward Peter-Paul
Aroostook Band of Micmacs
7 Northern Road
Presque Isle, ME 04769

Re: New England Region 19 700MHz Plan Amendment

Dear Tribal Representative:

Attached is a CD of the 700MHz Plan Amendment for New England Region 19. We are seeking your comments on this Plan so we may submit it to the Federal Communications Commission (FCC). Please review and respond with comments within 30 business days of receipt.

If you have any questions, please contact me. My phone number is (860) 685-8157. My email is jerry.zarwanski@ct.gov . You may request additional copies by calling my office at (860) 685-8080. Thank you for your time and attention to this matter.

Sincerely,

Jerry Zarwanski

Jerry Zarwanski, Chairman
New England Region 19 700MHz Committee
c/o Connecticut Dept. of Emergency Services & Public Protection
Department of Statewide Emergency Telecommunications
1111 Country Club Road
Middletown, CT 06457

Attachment: CD - New England 700MHz Regional Plan Amendment, June 2015

The New England 700MHz Committee Region 19

June 10, 2015

Chief Brenda Commander
Houlton Band of Maliseet Indians
88 Belll Road
Littleton, ME 04730

Re: New England Region 19 700MHz Plan Amendment

Dear Tribal Representative:

Attached is a CD of the 700MHz Plan Amendment for New England Region 19. We are seeking your comments on this Plan so we may submit it to the Federal Communications Commission (FCC). Please review and respond with comments within 30 business days of receipt.

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Department of Statewide Emergency Telecommunications
1111 Country Club Road
Middletown, CT 06457

Attachment: CD - New England 700MHz Regional Plan Amendment, June 2015

The New England 700MHz Committee Region 19

June 10, 2015

Chief William Nicholas, Sr.
Passamaquoddy Tribe of Indians
Indian Township Reservation P.O. Box 301
Princeton, ME 04668

Re: New England Region 19 700MHz Plan Amendment

Dear Tribal Representative:

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1111 Country Club Road
Middletown, CT 06457

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The New England 700MHz Committee Region 19

June 10, 2015

Chief Frederick Moore, III
Passamaquoddy Tribe of Indians
Pleasant Point Reservation P.O. Box 343
Perry, ME 04667

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Department of Statewide Emergency Telecommunications
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Middletown, CT 06457

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The New England 700MHz Committee Region 19

June 10, 2015

Chief Kirk Francis
Penobscot Indian Nation
12 Wabanaki Way
Indian Island, ME 04468

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Department of Statewide Emergency Telecommunications
1111 Country Club Road
Middletown, CT 06457

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The New England 700MHz Committee Region 19

June 10, 2015

Chief Vernon Lopez
Mashpee Wampanoag Tribal Council
108 Meetinghouse Road
Mashpee, MA 02649

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Department of Statewide Emergency Telecommunications
1111 Country Club Road
Middletown, CT 06457

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The New England 700MHz Committee Region 19

June 10, 2015

Chairman Tobias Vanderhoop
Wampanoag Tribe of Gay Head (Aquinnah)
20 Black Brook Road
Aquinnah, MA 02535

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1111 Country Club Road
Middletown, CT 06457

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The New England 700MHz Committee Region 19

June 10, 2015

Chief Sachem Matthew Thomas
Narragansett Indian Tribe
P.O. Box 268
Charlestown, RI 02813

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