North American
Broadcasters Association

The International Policy Threat to Broadcasting in UHF and Fixed Satellite in C-Band

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Fox Networks Group
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Your Voice in the International Broadcasting Community

Who is NABA?

- The North American Broadcasting Association
- Members
  - Bell Media
  - CBC/Radio-Canada
  - CBS Broadcasting
  - DIRECTV
  - Disney | ABC Television
  - Fox Entertainment
  - Televisa
  - NBCUniversal
  - Time Warner
  - TV Azteca
  - Univision
- Member of the **World Broadcasting Union (WBU)**, along with:
  - ABU (Asia-Pacific)
  - ASBU (Arab States)
  - AUB (African)
  - CBU (Caribbean)
  - EBU (European)
  - IAB/OTI (South American)

World Radio Conference (WRC) 2015 Agenda Item 1.1

- Consider
  - Additional spectrum allocations to the mobile service on a primary basis
  - Identification of additional frequency bands for International Mobile Telecommunications (IMT) and related regulatory provisions
- Facilitate the development of terrestrial mobile broadband applications
- In accordance with ITU-R Resolution **233**

Broadcast Bands Considered "Suitable"

# / Bands (MHz)	Applicable Methods and Options* (shown in *italics*)			
	Method A	**Method B-ToA**	**Method B-FN**	**Method C**
1 / 470-694/698	A (*A1, A2, A3*)	B-ToA (*B1, B2, B3*)	B-FN (*B4*)	C (*C1, C2*)
2 / 1 350-1 400	A	B-ToA (*B1*)	B-FN (*B1*)	C (*C1a, C1b, C2*)
3 / 1 427-1 452	A	-	-	C (*C1a, C1b, C2, C3*)
4 / 1 452-1 492	A	-	-	C (*C1, C2, C3, C4*)
5 / 1 492-1 518	A	-	-	C (*C1, C2, C3, C4*
6 / 1 518-1 525	A	-	-	C (*C1, C2, C3*)
7 / 1 695-1 710	A	B-ToA	B-FN	C (*C1*)
8 / 2 700-2 900	A	B-ToA (*B1, B2*)	B-FN (*B1, B2*)	C (*C1, C2*)
9 / 3 300-3 400	A	B-ToA (*B1, B2*)	B-FN (*B1, B2*)	C (*C1, C2*)
10 / 3 400-3 600	A	B-ToA (*B1, B2, B3, B4, B5*)	B-FN (*B1, B2, B3, B4,B5*)	C (*C1, C2, C3, C4, C5*)
11 / 3 600-3 700	A	B-ToA (*B1, B2, B3*)	B-FN (*B1, B2, B3*)	C (*C1, C2, C3*)
12 / 3 700-3 800	A	B-ToA (*B1, B2, B3*)	B-FN (*B1, B2, B3*)	C (*C1, C2, C3*)
13 / 3 800-4 200	A	B-ToA (*B1, B2, B3*)	B-FN (*B1, B2, B3*)	C (*C2, C2, C3*)
14 / 4 400-4 500	A	-	-	C (*C1, C2*)
15 / 4 500-4 800	A	-	-	C (*C1, C2, C3, C4*)
16 / 4 800-4 990	A	-	-	C (*C1, C2*)
17 / 5 350-5 470	A	-	-	-
18 / 5 725-5 850	A	-	-	-
19 / 5 925-6 425	A	-	-	C (*C1, C2, C3, C4*)

This table is from a paper made by Cindy Cook, following the 3rd Inter –Regional workshop for WRC15 – Document called Panel session 3 WRC15 Agenda 1.1

Broadcast Bands Considered “Suitable”

- UHF [470-698] MHz.
- C-band downlink [3 400-4 200] MHz.
  - NABA membership uses “standard C-band” [3 700-4 200] MHz for TV distribution.
  - Current USA proceeding for “small cell” operation in [3 550-3 650], possibly including [3 650-3 700] MHz.
- Many other bands are also considered suitable.

Methods that can be use

3 Methods were proposed to Administrations to represent there view on a candidate band

Method A: No change to the existing Radio Regulations

Method B: Allocation to the mobile service (either by)
- B1: Inclusion of allocation in table of allocations
- B2: Inclusion of allocation via footnote

Method C: Identification for IMT

Current Allocation Status in Region 2

- UHF [470-698] MHz.
  - Footnote in frequency allocation table for North American countries (and Guyana and Jamaica).
    - Primary mobile allocation (subject to Article 9.21).
    - **No** identification to IMT.
- C-band [3 400-4 200] MHz.
  - By way of Table of Allocations:
    - Secondary mobile allocation [3 400-3 500] MHz.
    - Primary mobile allocation [3 500-4 200] MHz.
    - **No** identification to IMT.

Importance of a New Allocation in the Table of Allotments

- Global harmonization.
- IMT devices will not be manufactured and deployed at volume in a band without the primary allocation change in the table with IMT identification.
- Footnote is not enough – broadcasting will remain THE primary service.

WRC-15 Timeline/Structure

(6)

You are here.
X

WRC-12

- Agenda Items for WRC-15

JTG 4-5-6-7

- Agenda Items
  - AI 1.1
  - AI 1.2
- Spectrum requirements
- Sharing studies
- IMT candidate bands

CPM

- Input CPM text
- Make preparations for WRC-15

WRC-15

Ideal path of influence

Sector Members

- Broadcast
  - NABA
  - NAB
  - Intelsat
  - SES
- Wireless
  - Intel
  - Qualcomm
  - Verizon
  - AT&T

USJTG

- Groups
  - State Dept.
  - NTIA
  - FCC
  - Industry
- US views/positions

CITEL

- Region 2 Administrations
  - US
  - Canada
  - Mexico
  - Brazil
  - Including Caribbean Administrations
- Inter-American views/positions

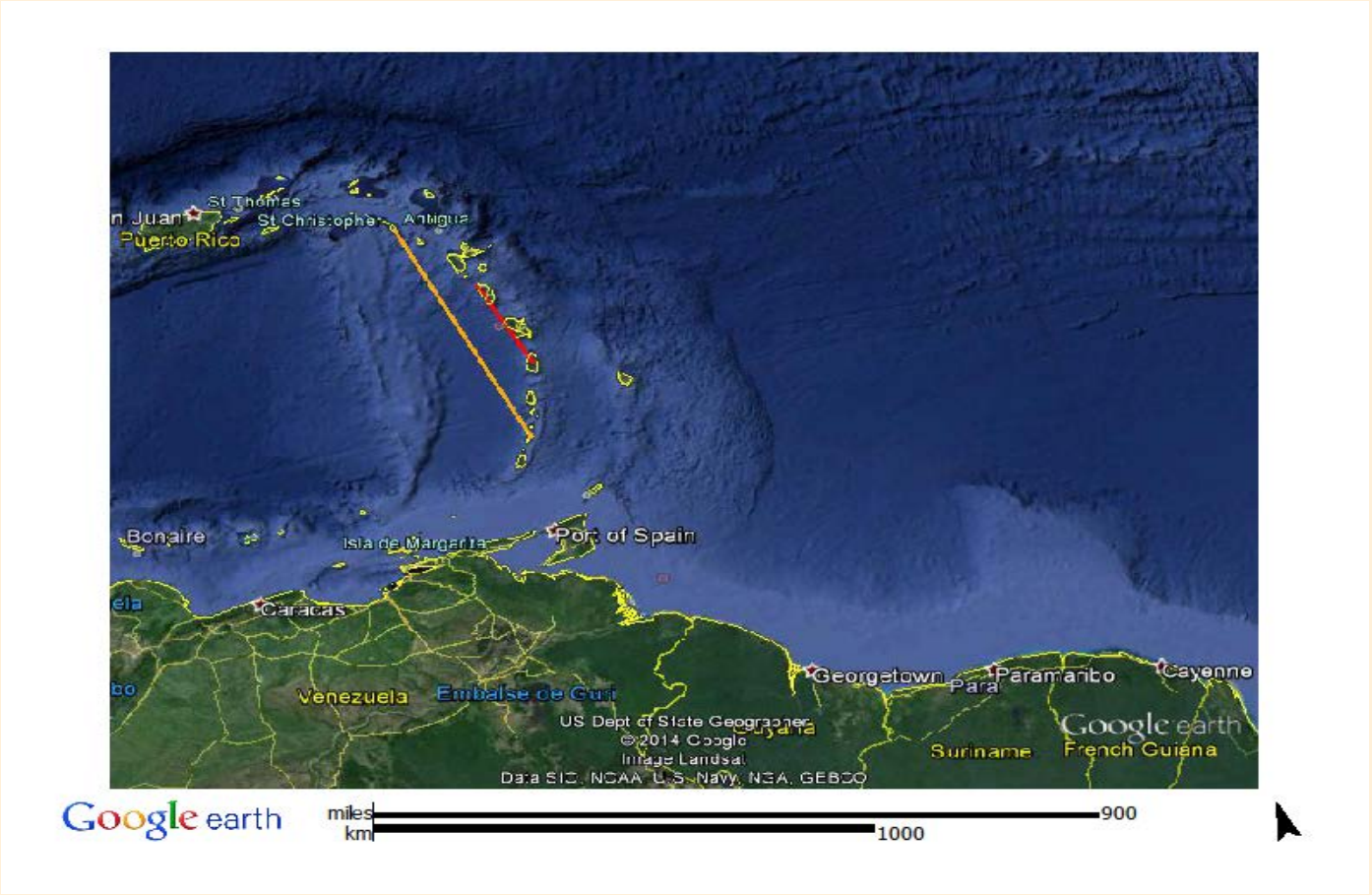
CITEL MEETING

CITEL MEETING…..discussion on C-band

Results of the JTG 4-5-6-7 (UHF)

- Studies determined separation distances required to protect Broadcasting from an IMT deployment.
  - Co-channel: over 200 km.
  - Adjacent channel: 37 km.
- Broadcasting/IMT Sharing and Compatibility Report approved.
- Draft CPM text complete.

Results of the JTG 4-5-6-7 (UHF)



ITU-R Working Party 6A (WP6A)

- Home group for VHF/UHF Broadcasting.
- **JTG Broadcasting/IMT Sharing and Compatibility Report.**
  - Sent to the affected Study Groups (SGs) for final approval.
    - SG6
    - SG5
  - Expected to become an ITU-R **BT** Report ("owned" by SG6).
  - WP6A would be able to issue updates and modifications to the Report with SG6 approval.

FCC (UHF)

- US proposal was created by FCC staff.
- Supported by wireless industry.
  - –Alcatel-Lucent
  - –Intel
  - –Qualcomm
  - –Verizon
  - –Sprint
  - –AT&T
- Opposed by Broadcasters
  - –NAB
  - –FOX
  - –CBS
- Broadcasters submitted a NOC proposal.
- FCC selected their original non-consensus proposal (but reinserted Article 9.21).

USA Proposal (UHF)

- Primary allocation to the mobile service in the 470-698 MHz band in Regions 1, 2 & 3.
- Full identification to IMT (e.g., LTE).
- Identification of the UHF band for IMT is the FCC's primary objective.

CITEL PCC II (UHF)

- **IAP**
  - –NOC in the (470-698) MHz band.
  - –(13) Administrations support the proposal**.**

•Argentina	•El Salvador	•Nicaragua	•Peru
•Brazil	•Ecuador	•Panama	•Uruguay
•Dominican Republic	•Guatemala	•Paraguay	•Venezuela

CITEL PCC II (UHF – IAP in opposition)

- US delegation is pushing the US proposal at CITEL to become an Inter-American Proposal (IAP).
- This draft IAP (DIAP) that was originally support by 4 Administration (Canada, USA, Mexico, Colombia) has now **8** supports, 4 Caribbean Administrations add up (Bahamas, Barbados, Belize and Trinidad) bringing this DIAP to an IAP
- This results come from the last CITEL preparation meeting in Ottawa.

CITEL PCC II

- 2 opposing IAPs can be sent to the WRC if supported by equal number of Administrations.
- IAP is a strong position at the WRC.

CITEL PCC II

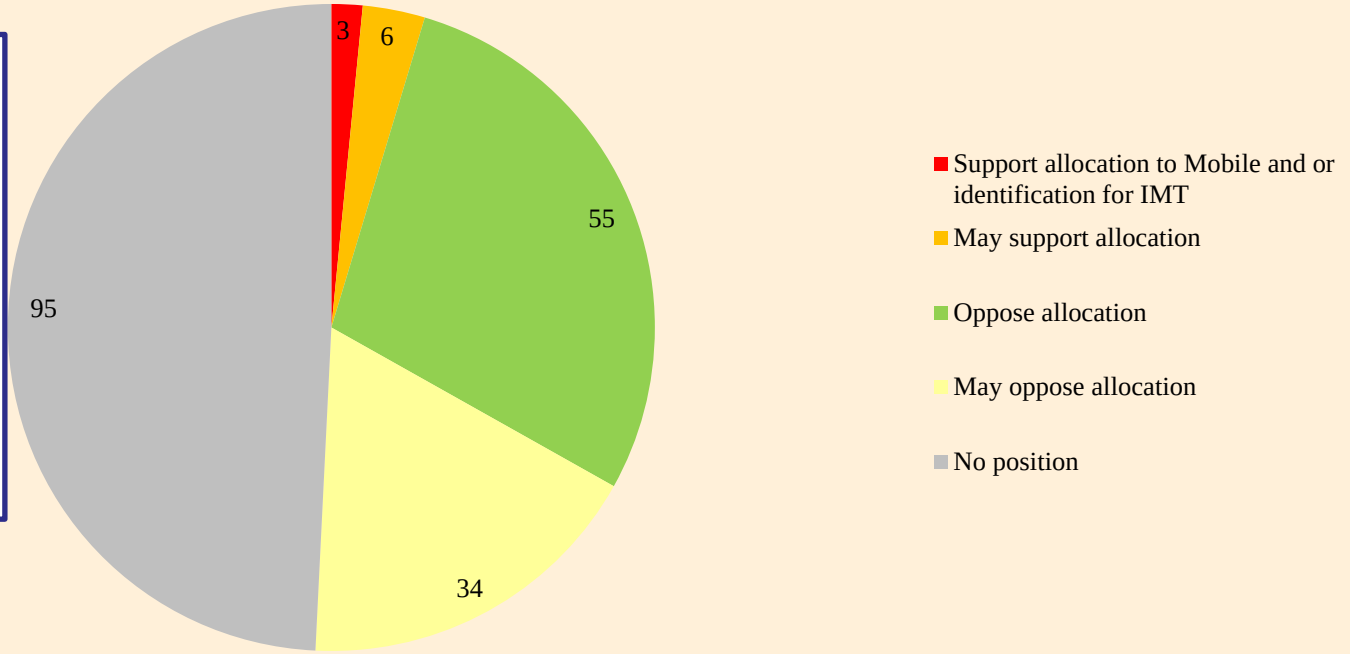
- To avoid an IAP to be filed to WRC15, you need an IAP in opposition that is support by at least half of the number of supports for the IAP that has the largest numbers of support
- 13 countries was supporting NOC in UHF, it means that an opposite IAP needed at least 7 supports, they now got 8
- NO IAP for UHF have come out of the CITEL
- Then, Administrations on both side can develop Multi-Country proposal

Global Positions on UHF

All Regions - Admin views on UHF allocation for WRC15

(193 Administrations)

THAT
IS
NOT
UPDATED,
We will see
At WRC-15



Results of the JTG 4-5-6-7 (C-Band)

- Studies determined separation distances required to protect Fixed Satellite from an IMT deployment.
  - In-band: 525 km.
  - Adjacent band: tens of kms (Guy Bouchard will tell you ☺)
- Fixed Satellite/IMT Sharing and Compatibility Report approved.
- Draft CPM text complete.

ITU-R Working Party 4A (WP4A)

- Home group for the Fixed Satellite Service
- **JTG Fixed Satellite/IMT Sharing and Compatibility Report.**
  - Sent to the affected Study Groups (SGs) for final approval.
    - SG4
    - SG5
  - Expected to become an ITU-R S Report ("owned" by SG4).
  - WP4A would be able to issue updates and modifications to the Report with SG4 approval.

USA & Canada View (C-Band)

- **Co-Primary** allocation for IMT in (3 400 – 3 500) MHz with Fixed satellite allocation
- **Primary** allocation for IMT in (3 500 – 3 700) MHz
- NOC for (3 700 – 4 200) MHz
- It is NOT an IAP

CITEL PCC II (C-Band)

- 2 non-opposing IAP at the end of the last Ottawa CITEL Meeting:

1. IAP #1
   - IMT identification in [3 400-3 600] MHz.

1. IAP #2
   - NOC for [3 600-4 200] MHz.

WBU Position

- Supports a NOC in 470-698 MHz.

Contiguous spectrum should be allotted in the bands assigned to the broadcast service to allow for the robust delivery of high-quality media content, data and signaling that meets or exceeds the capabilities of current fixed and mobile reception and display devices as well as those that are expected to be deployed in the future.

- Supports a NOC in 3 400-4 200 MHz.

The use of downlink spectrum allocated at C-Band (3.7 – 4.2 GHz) or extended C-Band in the Fixed-Satellite Service is essential to broadcasters' operations around the world. Systems employing this FSS band have been extensively deployed over decades, primarily for the distribution of content from network centers to affiliated stations, cable head-ends and to other receiving systems.

- Studies support these NOC positions.
- Will continue to participate actively.

WRC15 – Starting situation

Frequency Band	APT	ASMG	ATU	CEPT	CITEL	RCC
1 - 470-694/698 MHz	A	A	A	A		A
2 – 1 350-1 400 MHz	A	A	C	A		A

WRC15 – Starting situation

Frequency Band	APT	ASMG	ATU	CEPT	CITEL	RCC
10 – 3 400-3 600 MHz	A	B&C		B&C	B&C	A
11 – 3 600-3 700 MHz	A	A	A	B&C	A	A
12 – 3 700-3 800 MHz	A	A	A	B&C	A	A
13 – 3 800-4 200 MHz	A	A	A	A	A	A

UHF REPACKING

Canada 35M
+
Mexico 122M
+
USA 319M
=
466M

UHF REPACKING – The International Border

UHF Repacking

- Decision on Repurposing 600MHz band from IC is out
  - http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf10891.html
- We will follow USA → The amount of spectrum that will be free by the USA spectrum auction will drive how much broadcaster will loose in Canada
- Some differences:
  - No TV assignment will be made in the last channel adjacent to the new IMT allocation
- Available channel will be ensure for all operating regular power TV stations in Canada
- No vacant allotment in planned, but you can drop in

UHF Repacking…food for thought

- The USA got 1.5B $ from the government for the broadcaster
- Plus, the auction

- In Canada, we have….
- Limited to current parameters
- What about the future of OTA? ATSC 3.0?
- Could be a good time to switch…..

- IC is completely silent….

Wireless Microphones

- Microphones were kicked out of 700 Mhz band
- They will be kicked out of the 600 Mhz band (channel 35 and +)
- As an example, at CBC, we have just ordered 150 x 50k$ Sony kit
- In total, we have more than 1M$ of brand new wireless mics

- Sony mics come in a 24 MHz wide channel….in UHF
- After the repacking, what will happen?

- Ex: Toronto: 9 UHF R HDTV Stations

Whites Spaces Devices

- First, you need free TV bandwidth
- Second you need a database owner
  - ➢ USA have their database, need to be fine tune
  - ➢ In Canada don’t have one approved yet…

Industry Canada Industrie Canada

DBS-01
Issue 1
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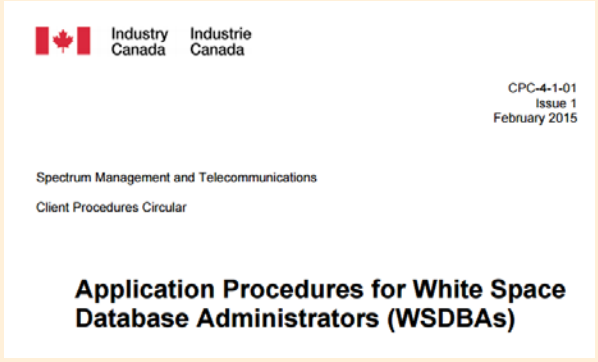
Spectrum Management and Telecommunications

Database Requirements

White Space Database Specifications



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CPC-4-1-01
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Spectrum Management and Telecommunications

Client Procedures Circular

Application Procedures for White Space Database Administrators (WSDBAs)

NABA Contact Information

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