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## **GE84 Workshop**

### **The GE84 Agreement Procedures**

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# *The Geneva 84 Agreement*

- relating to the Use of the Band 87.5 - 108 MHz for FM Sound Broadcasting (Region 1 and Part of Region 3)

100kHz channel spacing



# *GE84 in summary*

- **Article 13:**
  - Entry into force on 1 July 1987, at 0001 hours UTC.
  - established for a period of 20 years from the date of entry into force of the Agreement.
  - This Agreement shall remain in force until it is revised by a competent *administrative radio conference*.
- **Number of assignments:**
  - 1987 : 51 168 recorded frequency assignments
  - Now :
    - > 80 000 recorded assignments
    - > 12 000 pending modifications in coordination

## *Services likely to be affected (Coordination required)*

- ✓ Other VHF-FM sound broadcasting stations(4.2.2 a)
- ✓ ST61 television assignments in the band 87.5 – 100 MHz (4.2.2 b)
- ✓ Fixed and mobile services (4.2.2 c, d, e)
- ✓ Aeronautical radionavigation services above 108 MHz (4.2.2 f)

# Services likely to be affected (Coordination required)

## 4.2 *Initiation of the modification procedure*

4.2.1 Any administration proposing to modify the characteristics of an assignment appearing in the Plan or to add a new assignment to the Plan shall obtain the agreement of any other administration whose services are likely to be affected.

4.2.2 a) The sound broadcasting stations of an administration are likely to be affected by a proposed modification to the Plan if the distance from the station under consideration to the nearest point on the boundary of the country of that administration is less than the limit indicated in Annex 4, Chapter 1.

Other VHF-FM sound  
broadcasting stations

4.2.2 b) The television stations of an administration in the band 87.5 - 100 MHz which are in conformity with the Stockholm Agreement (1961) are likely to be affected by a proposed modification to the Plan if the distance from the station under consideration to the nearest point on the boundary of the country of that administration is less than the limit indicated in Annex 4, Chapter 2.

ST61 television  
assignments in the  
band 87.5 – 100 MHz

4.2.2 c) The stations in the fixed and mobile services of an administration of a Contracting Member in Region 3 in the band 87.5 - 100 MHz are likely to be affected by a proposed modification to the Plan if the appropriate limits indicated in Annex 4, Chapters 4 and 5, are exceeded.

4.2.2 d) The stations in the land mobile service of an administration in Region 1 in the band 87.5 - 88 MHz, coordinated under Article 14 of the Radio Regulations, are likely to be affected by a proposed modification to the Plan if the limits indicated in Annex 4, Chapter 4, are exceeded.

Fixed  
and  
Mobile  
services

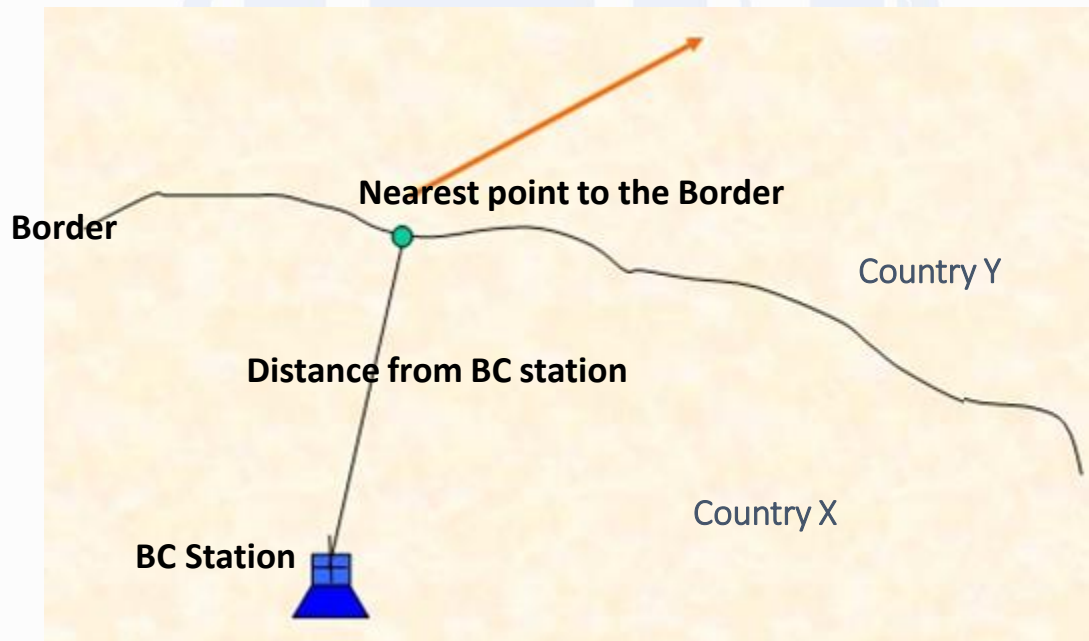
4.2.2 e) The stations of the fixed and mobile services, except the aeronautical mobile (R) service, of an administration in Region 1, operating in the band 104 - 108 MHz in conformity with the Radio Regulations on a permitted basis until 31 December 1995, are likely to be affected by a proposed modification to the Plan if the appropriate limits indicated in Annex 4, Chapters 4, 5 and 6, are exceeded.

4.2.2 f) The stations in the aeronautical radionavigation service of an administration in the band 108 - 117.975 MHz are likely to be affected by a proposed modification to the Plan if the distance from the station under consideration to the nearest point on the boundary of the country of that administration is less than the limit indicated in Annex 4, Chapter 3. In this case, the procedure to be applied is contained in Article 5.

Aeronautical  
radionavigation  
services

# ***Coordination with other sound/TV broadcasting services VHF-FM***

- distances between the broadcasting station and the nearest point on the boundary of any other administration shall be used to identify administrations whose sound broadcasting services may be considered as affected





# *BC to BC/BT coordination distance*

- **coordination distances depend on:**
  - Effective radiated power of the proposed BC station
  - Effective antenna height
  - Propagation path (land, warm/cold seas and areas of super refractivity)
- **See Chapters 1 and 2 of Annex 4 of the Agreement:**
  - Tables 4.1- 4.4 : limits for sound
  - Tables 4.5 to 4.7: limits for television

TABLE 4.1

*Coordination distances,  $D_L$ , in km, for propagation paths over land*

Effective radiated power		Effective antenna height (m)							
		10	37.5	75	150	300	600	1200	1800
dBW	W	Coordination distances (km)							
55	300k	520	520	530	540	560	600	630	670
50	100k	460	460	470	490	510	540	580	610
45	30k	410	410	420	430	450	480	520	560
40	10k	350	350	370	380	400	430	470	500
35	3k	300	300	310	330	340	380	420	450
30	1k	250	250	260	270	290	320	360	400
25	300	140	190	210	220	240	280	320	350
20	100	70	140	160	180	190	230	270	300
15	30	45	100	130	140	150	190	230	260
10	10	35	65	90	100	120	150	190	220
5	3	30	45	65	75	95	120	160	180
0	1	20	35	50	60	80	100	140	150



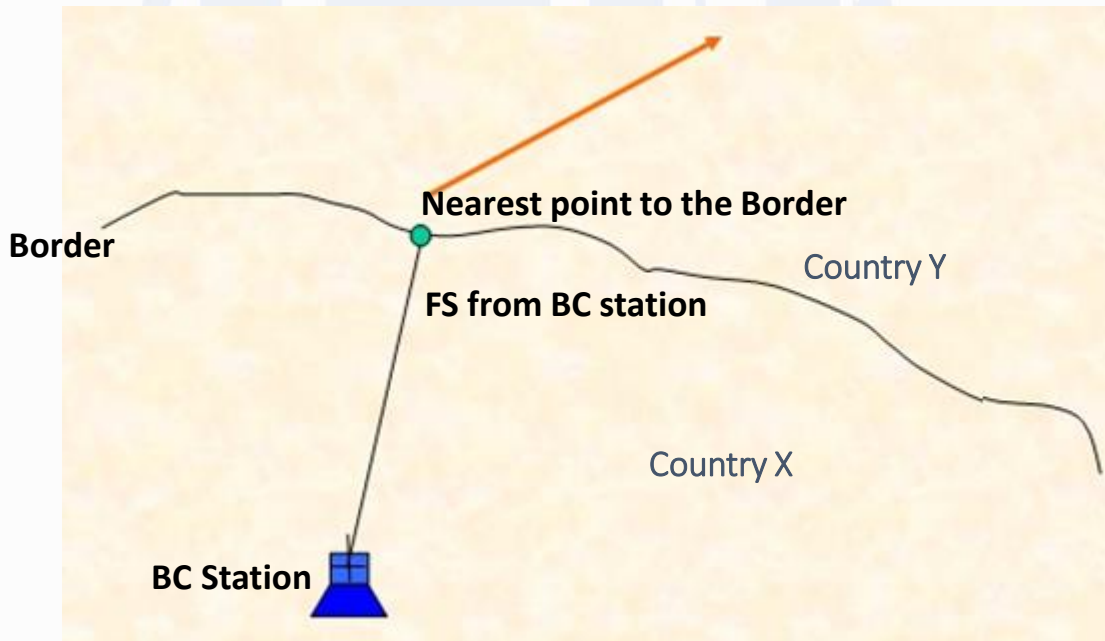
# *BC to BC/BT Coordination distance*

## Note

- Limits for television consider corrected ERPs to take account the variation in the protection ratios depending on frequency separation between FM and television frequency carriers (see Table 4.8 of Chapter 2 of Annex 4)

# Coordination with fixed & mobile services

- *Fixed & mobile services are considered as to be affected if field strength (FS) of BC at the nearest point on the boundary of another administration exceeds established limits*

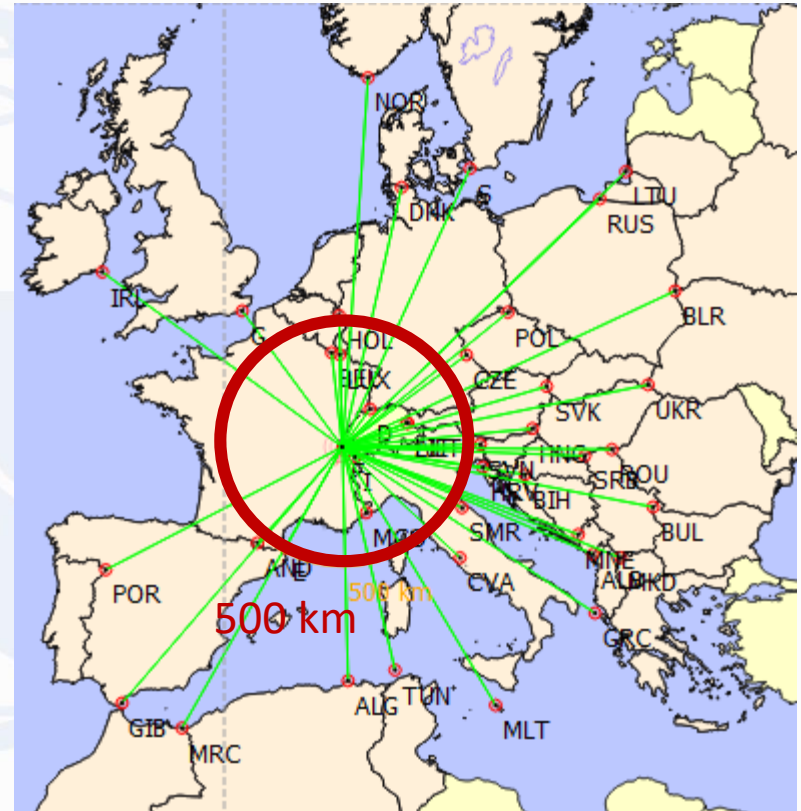


# *Coordination with Fixed and Mobile services*

- Fixed service : 0 dB ( $\mu\text{V/m}$ ).
- Land mobile service: limits depend on the polarization of the BC station:
  - Region 3 (87.5-100 MHz)
    - horizontal polarization: 18 dB( $\mu\text{V/m}$ )
    - vertical or mixed polarization: 0 dB( $\mu\text{V/m}$ )
  - Region 1 Monaco (87.5-88MHz)
    - horizontal polarization: 14 dB( $\mu\text{V/m}$ )
    - vertical or mixed polarization: 6 dB( $\mu\text{V/m}$ )

# *Coordination with ARNS in the band 108 - 117.975 MHz*

Distance to the nearest  
point on  
the border < 500 km  
(Chapter 3 of Annex 4)



# Resolution 4 of the Agreement

**Non-Contracting Members outside the planning area** having *aeronautical radionavigation services* (108 - 117.975 MHz)

➤ **Limit Chapter 3 Annex 4 applies.**

- Notifying administration:

- **to consult** with Adm of non-Contracting Member

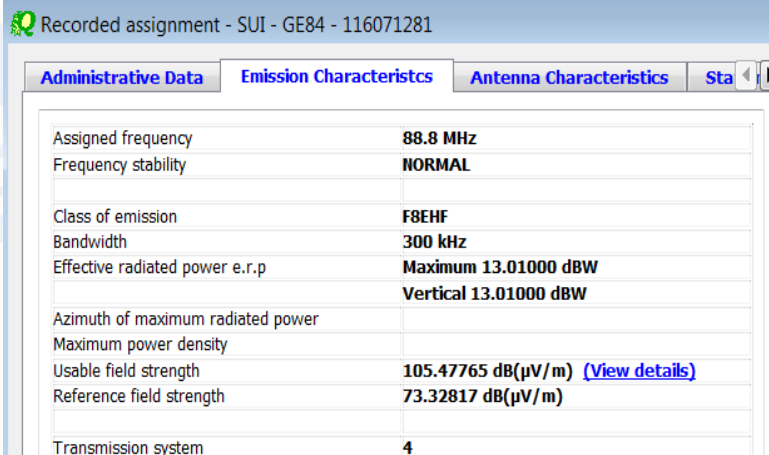
- **to resolve any incompatibility**, if reported by the non-Contracting Member.

# *Agreement to proposed BC station*

- Coordination between administrations on the basis of a table of distances (Annex 4)
- Plan modification should normally be accepted by affected administration on the basis of the following technical criteria for the protected station:
  - a) Resulting  $E_u \leq 54 \text{ dB}(\mu\text{V/m})$  (sound)
  - b) Resulting  $E_u \leq 52 \text{ dB}(\mu\text{V/m})$  (television)
  - c) Resulting  $E_u$  increase  $\leq 0.5 \text{ dB}$  relative to reference  $E_u$  ( $E_{u\text{-ref}}$ ) if limit a) or b) is exceeded.

# The Reference Situation

- Extract of the GE84 Agreement :
  - *The **reference Eu** of an assignment to be protected is the FS which results from the Plan at the time this assignment was first recorded in the Plan.*
  - *If, due to deletions or modifications, the usable field strength becomes lower, then this lower value becomes the new **EuRef**.*
- Published in the BRIFIC.



Recorded assignment - SUI - GE84 - 116071281

Assigned frequency	88.8 MHz
Frequency stability	NORMAL
Class of emission	F8EHF
Bandwidth	300 kHz
Effective radiated power e.r.p	Maximum 13.01000 dBW Vertical 13.01000 dBW
Azimuth of maximum radiated power	
Maximum power density	
Usable field strength	105.47765 dB(μV/m) <a href="#">(View details)</a>
Reference field strength	73.32817 dB(μV/m)
Transmission system	4



# *Quick Modification Procedure*

- No agreement required if modifications involve:

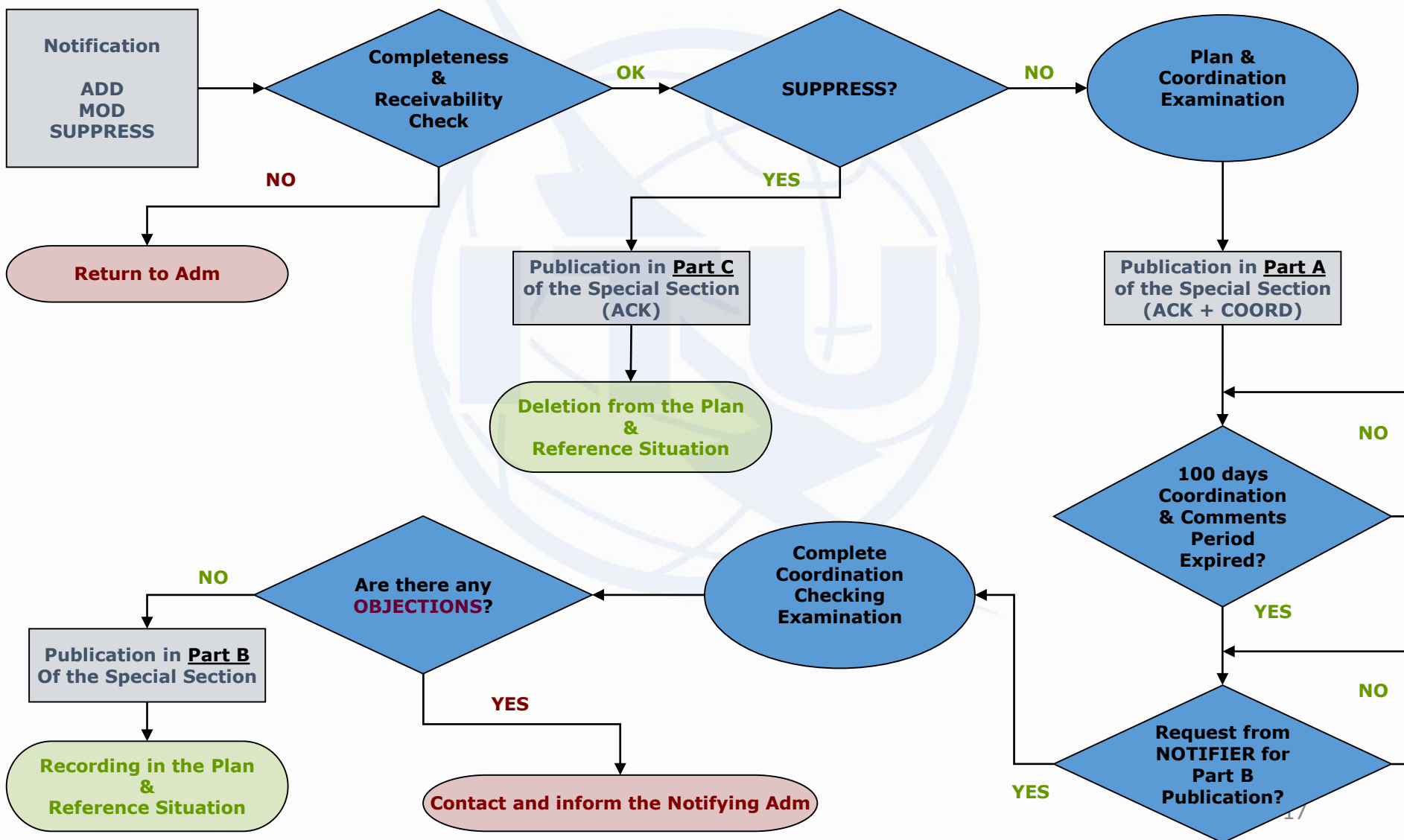
- Less interference – lower ERP
- Distance to border > coordination limits
- Small change in site location

- 15 km ERP  $\geq$  1kW

- 5 km < 1kW

**provided that the change in topographical conditions does not increase the probability of interference caused to the stations of other countries.**

# Plan modification Procedure



# *Plan modification Procedure*

- *Notification:*
  - T01 notice form for Addition or Modification to the Plan
  - TB5 notice for Suppression or Withdrawal
- *Coordination:*
  - No comment = AGREEMENT
- *Publication*
  - Must be requested for publication in Part B (TB3 notice)
  - Publication in Part B only if no objections
- *Important*
  - The frequencies pending in coordination stage are never deleted, except on request from notifying administration

## *Assistance from BR (4.3.13)*

Administration may request BR assistance in:

- ❖ Seeking agreement from another ADM
- ❖ Applying of the Article 4 procedure at any stage
- ❖ Carrying out technical studies in relation to this procedure
- ❖ GE84 compatibility analysis available on ***eTools*** at  
<http://www.itu.int/ITU-R/eBCD/MemberPages/eCalculations.aspx>



*Thank you for your attention!*

*Questions?*

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