



The GE84 Agreement Procedures



Michèle Coat Degert & Fodé Traore Bangali

- 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

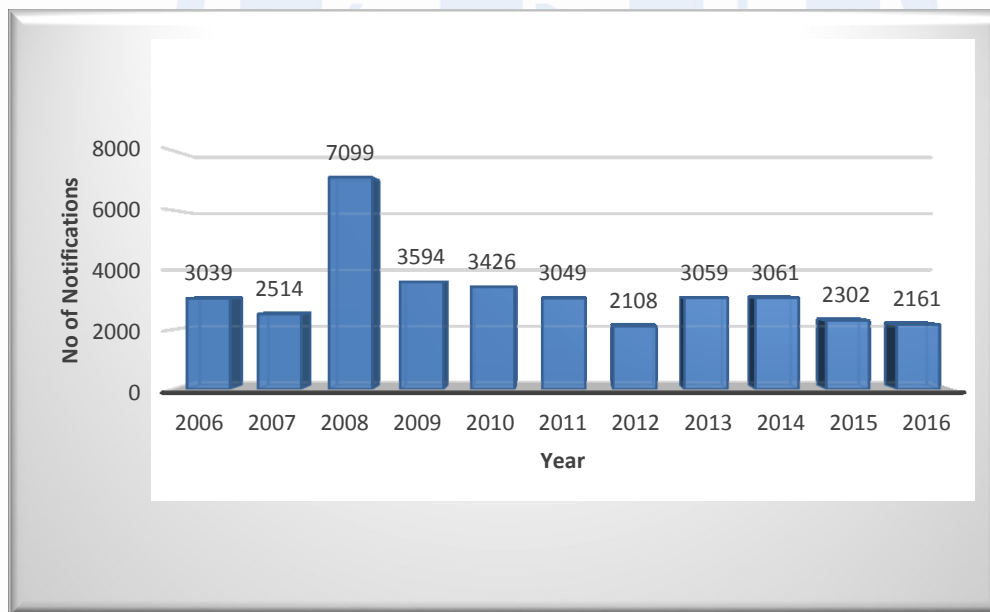


➤ **Article 13:**

- **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*.**

- **1987 : 51 168 frequency assignments**
- **Now : 80 780 recorded assignments**

more than 12 000 pending modifications in coordination





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.

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.

Fixed and Mobile services

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



Table of Frequency Allocations



| Allocation to services | | |
|---|---|---|
| Region 1 | Region 2 | Region 3 |
| 75.2-87.5 FIXED MOBILE except aeronautical mobile 5.175 5.179 5.187 | 75.2-75.4 FIXED MOBILE 5.179 | |
| | 75.4-76 FIXED MOBILE | 75.4-87 FIXED MOBILE |
| | 76-88 BROADCASTING Fixed Mobile | 5.182 5.183 5.188 87-100 FIXED MOBILE BROADCASTING |
| 87.5-100 BROADCASTING 5.190 | 5.185 88-100 BROADCASTING | |
| 100-108 | BROADCASTING 5.192 5.194 | |
| 108-117.975 | AERONAUTICAL RADIONAVIGATION 5.197 5.197A | |

5.190 *Additional allocation:* in Monaco, the band 87.5-88 MHz is also allocated to the land mobile service on a primary basis, subject to agreement obtained under No. 9.21. (WRC-97)

5.191 Not used.

5.192 *Additional allocation:* in China and Korea (Rep. of), the band 100-108 MHz is also allocated to the fixed and mobile services on a primary basis. (WRC-97)

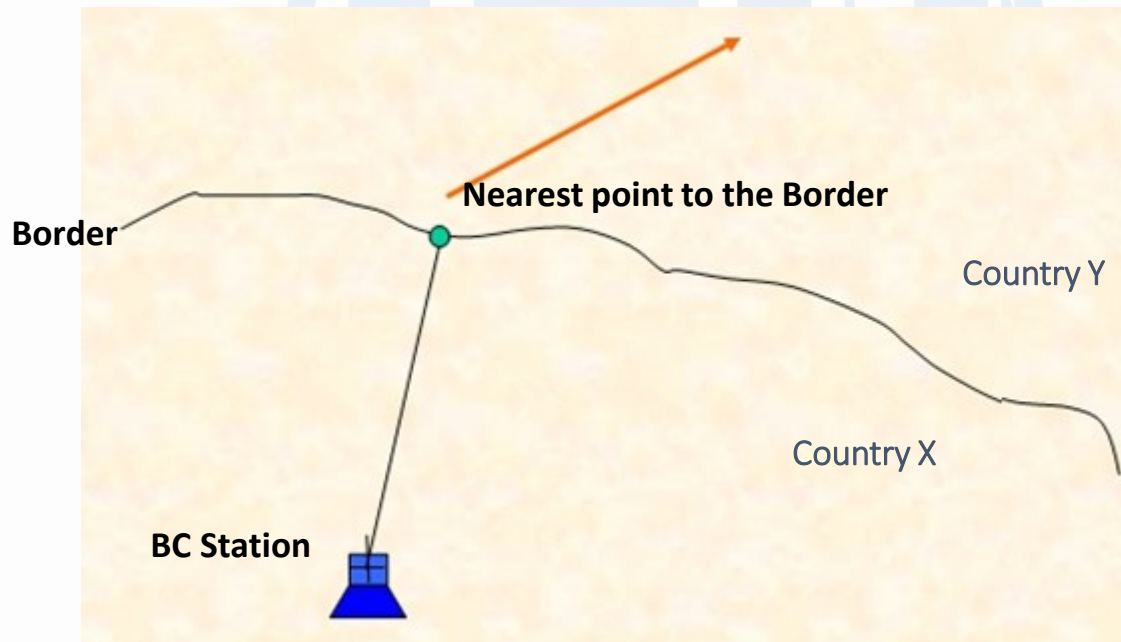
5.193 Not used.

5.194 *Additional allocation:* in Azerbaijan, Kyrgyzstan, Somalia and Turkmenistan, the band 104-108 MHz is also allocated to the mobile, except aeronautical mobile (R), service on a secondary basis. (WRC-07)



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



- **coordination distances depend on:**
 - ERP
 - Effective antenna height
 - Propagation Path (land, warm and cold seas and areas of super refractivity)

- **See Chapter 1 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

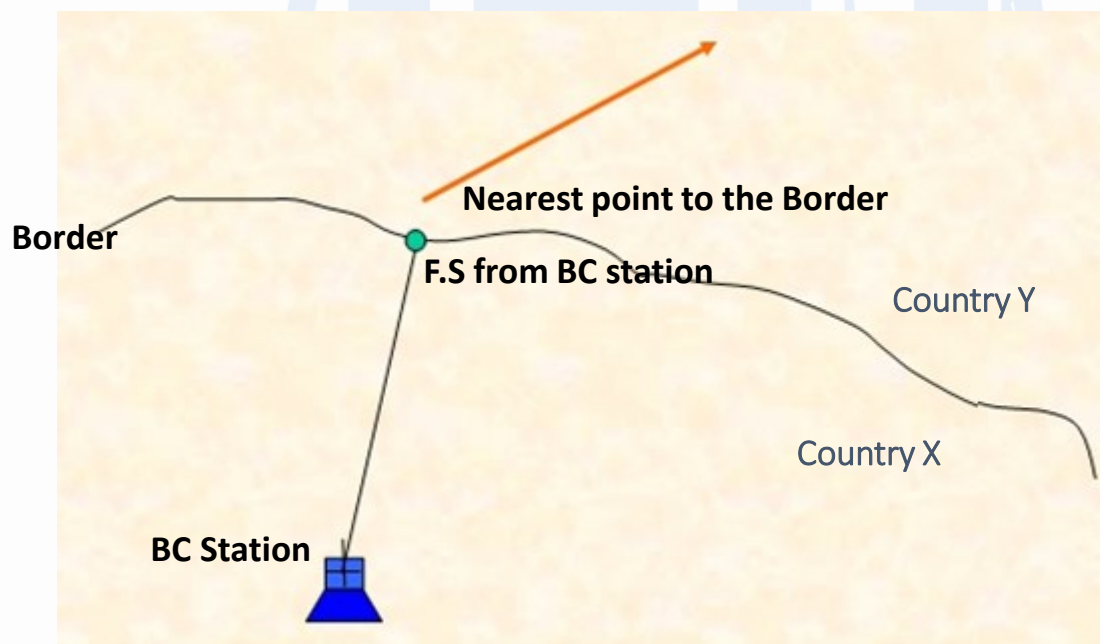


Note

- **Limits for television consider corrected erps to take account of the variation in the protection ratios depending on frequency separation between FM and television frequency carriers (see Table 4.8 of Chapter 1 of Annex 4)**

Coordination with fixed & mobile services

- ***Fixed & mobile services are affected if field strength (FS) of BC at the nearest point on the boundary of another administration exceeds a limit***





Coordination with Fixed and Mobile services



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

Coordination with ARNS in the band 108 - 117.975 MHz

Distance to the nearest
point on
the border < 500 km





Resolution 4 of the agreement

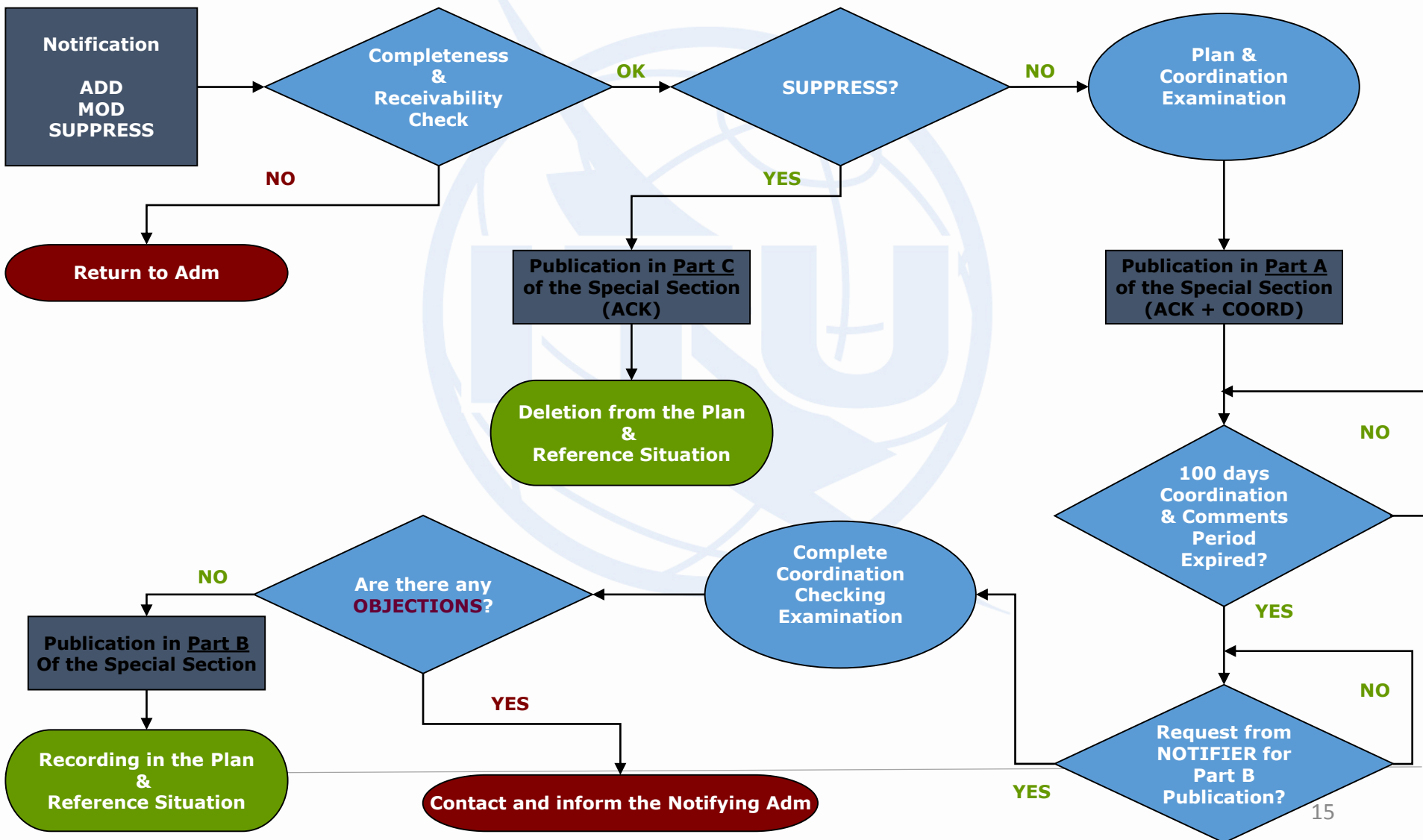


non-Contracting Members outside the planning area having aeronautical radionavigation services (108 - 117.975 MHz)

- **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.

Plan modification Procedure





GE84 Plan modification procedure Publication



The modifications to the Plan are published on the BR IFIC in a **Special Section GE84** containing **3 parts**:

Part A: particulars of proposed additions and/or changes (modifications) to the characteristics of recorded assignments published in accordance with paragraph 4.2.7 of Article 4 of the Regional Agreement;

in Part A, we publish the *coordination information*, both as determined by the Bureau's examinations (COORD REQUIRED) and as stated by the Notifying Administration at notification time (COORD COMPLETED, with source NOTIFIER).

The *date of publication* of the BR IFIC containing the Part A of the Special Section constitutes the *starting date* for the comment/coordination period (100 days)

Part B: particulars of additions and/or changes to the characteristics of recorded assignments on which agreement has been reached, published in accordance with paragraph 4.6.2 of Article 4 of the Regional Agreement

Notices are published in Part B at the end of the 100 day period for comments, *if there are NO OBJECTIONS* and *if the Notifying Administration has requested the Bureau to do so (TB3)*.

Part C: Particulars of assignments in the Plan which have been *cancelled*, in accordance with paragraph 4.5 of Article 4 of the Regional Agreement.

| Coordination Information | | | | | |
|--------------------------|---------------------|------------------------|------------------|----------------|-------------------|
| Administration | Coordination status | Coordination provision | Source of status | Date of status | Declared affected |
| CHN | COORD REQUIRED | RES4 | ITU | 18 Oct 2014 | ITU |
| KAZ | COORD REQUIRED | 4.2.2.A | ITU | 18 Oct 2014 | ITU |
| KAZ | COORD REQUIRED | 4.2.2.F | ITU | 18 Oct 2014 | ITU |
| KAZ | COORD COMPLETED | COORD | NOTIFIER | 16 Oct 2014 | NOTIFIER |

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 on the BRIFIC.
- Used as a basis in the coordination process

Recorded assignment - SUI - GE84 - 116071281

| Administrative Data | Emission Characteristics | Antenna Characteristics | Sta |
|-----------------------------------|---|-------------------------|-----|
| 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) (View details) | | |
| Reference field strength | 73.32817 dB(μV/m) | | |
| Transmission system | 4 | | |

- **Coordination between administrations on the basis of a table of distances (Annex 4)**
- **Agreement on Plan modification should be accepted if based on the following technical criteria :**
 - Resulting $E_u \leq 54$ dB(μ V/m) (sound)
 - Resulting $E_u \leq 52$ dB(μ V/m) (television)
 - Resulting E_u increase ≤ 0.5 dB relative to reference E_u (E_{u-ref}).

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*



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 request 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 (11 481 to date)

Assistance from BR (4.3.13)

Administration may request assistance in

- ❖ Seeking agreement from another ADM
- ❖ Applying any stage of the Article 4 procedure
- ❖ 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**

michele.coat@itu.int