

## Agreement between the Administrations of France and Spain concerning frequency coordination in the band 174-230 MHz

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The administrations of France and Spain,

*considering*

- a) the allotments and assignments registered by both Administrations in the GE06 Plan in the band 174-230 MHz, and provisions of the GE06 Agreement regarding assignments stemming from these allotments;
- b) that due to the time elapsed since its adoption, for the practical deployment of country-wide T-DAB networks in both countries, the GE06 Plan needs to be complemented with new allotments and assignments, which should be coordinated;
- c) that coordination will be facilitated by adopting in both countries a common set of technical parameters regarding coverage objectives, acceptable interference levels and propagation models, as it will reinforce the principle of equitable access to spectrum;
- d) that, since the adoption of the GE06 agreement and the GE06 Plan, advances have been made in the analysis of propagation phenomena and in the specification of digital broadcasting technologies, included in the relevant ITU-R and CEPT Reports and Recommendations;
- e) that compatibility of some entries to the GE06 Plan requires additional provisions,

*agree*

on the following provisions of sections 1 to 8 and Annexes 1 to 5.

### **1. Scope of this agreement**

This Agreement describes the updated rights in the coordination zone in terms of assignments and allotments between Spain and France within the band 174-230 MHz.

Assignments and allotments already registered in the GE06 Plan and not modified in the annexes to this agreement remain in force. However, France and Spain agree that the configuration of the allotments will be RPC5.

Assignments and allotments in the coordination zone not listed in the annexes must be coordinated and incorporated to Annexes 2 and 3 of this Agreement prior to operation and registration to the GE06 Plan, in accordance with the methodology described in section 5.

Assignments in the coordination zone not registered in the GE06 Plan and stemming from allotment conversion must be coordinated and incorporated to Annex 3 of this Agreement prior to operation and registration to the GE06 Plan, in accordance with the methodology described in section 5.

### **2. Coordination zone**

The contour of the Coordination Zone between France and Spain agreed between the two countries is included in Annex 1.

### **3. Allotments**

France and Spain agree on the allotments included in Annex 2.

These allotments serve the purpose to describe the geographical service areas to be covered by the corresponding assignments and requiring protection. To that effect, the applicable reference configuration for the allotments will be RPC 5 for both countries, taking into account the specific technical parameters described below.

These allotments can be registered in the GE06 Plan.

Existing allotments registered in the GE06 Plan and listed in Annex 5 should no longer be used nor claim protection.

### **4. Assignments**

France and Spain agree on the assignments included in Annex 3.

These assignments can be operated and registered in the GE06 Plan.

Existing assignments registered in the GE06 Plan and listed in Annex 5 should no longer be operated nor claim protection.

### **5. Methodology to study new requests in band 174-230 MHz**

For the study of new assignment requests in band 174-230 MHz, France and Spain agree on the methodology described in Annex 4.

### **6. Review of the Agreement**

With the consent of the other administration, this Agreement including its annexes may be modified at the request of one of the signatory Administrations where such a modification becomes necessary in the light of administrative, regulatory or technical developments. An administration cannot withdraw unilaterally from this Agreement.

### **7. Language of the Agreement**

This Agreement exists in two original versions in English. Each Administration has one of the versions.

### **8. Entry into force**

This Agreement will enter into force on the date of the signature.

For France

For Spain

Pierre Fichoux

Antonio Fernández-Paniagua Díaz-Flores

Annex 1



**Coordination Zone**



VHF E-F  
coordination zone.k



Annex 2

**Agreed allotments**

Agreed allotments of France	Agreed allotments of Spain
 F GS2 GA1.txt	 E GS2 GA1.txt

Annex 3

**Agreed assignments**

Agreed assignments of France	Agreed assignments of Spain
 F GS1.txt	 E GS1.TXT

## Annex 4

### **Compatibility analysis and interference criteria**

Both administrations agree:

- that new assignments outside the coordination zone should normally be agreed and registered to the Plan, i.e. published in Part A including the agreement of the other administration, without prejudice that this agreement might be temporarily withdrawn for some stations in specific and justified cases (e.g. notifications referred to a huge number of stations and/or received on vacation time or other dates when the resources for their study could be scarce), taking account the shorter deadlines for analysis that result from this mechanism;
- that for additional assignments in the coordination zone the following rules would apply:
  - The area of analysis would be limited as indicated in section a.
  - The propagation recommendations to be used for the interfering signal are indicated in section b.
  - Assignments creating an interfering field strength below the thresholds set in section c over the neighbouring country co-block allotments should normally be agreed.
  - Assignments corresponding to allotments or under the umbrella of assignments previously agreed which do not correspond to co-block situations should normally be agreed.
  - Assignments corresponding to allotments or under the umbrella of assignments previously agreed which correspond to co-block situations would be analyzed using the C/I methodology<sup>1</sup> described in section d.

In order to facilitate the coordination under this methodology, the following additional restrictions / conditions might be considered, when needed to solve co-block incompatibilities, e.g. limit the power and/or directivity of the assignments corresponding to an allotment within limits that do not compromise the coverage of the allotment.

If, in spite of the application of these conditions, a co-block incompatibility of an agreed allotment can't be solved, alternative approaches should be followed so to guarantee the complete the coverage of the allotment (e.g. agreeing on the use of an alternative frequency block for some stations in specific areas of the allotment<sup>2</sup>)

- Other assignments generating additional rights of use (i.e. not corresponding to allotments nor under the umbrella of assignments previously agreed) should be analysed individually, considering the principles of equitable access to and efficient use of spectrum.

#### a. Area of study within the coordination zone

Both administrations agree to restrict the area of study to populated areas below 2,000 m of altitude, railways, highways and main roads.

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<sup>1</sup> In those cases where the assignments corresponding to a relevant allotment of one country cover only partially the allotment area, the C/I analysis would be made against hypothetical stations providing adequate coverage of all the area of the allotment.

<sup>2</sup> The use of these alternative frequency blocks will not be considered as additional rights of use.

b. Propagation models

Both administrations agree that the propagation recommendations to be used for the interfering signal would be:

- Rec. ITU-R P.526 for land path with an effective Earth radius of 15,000 km to take account of abnormal variations of the refractive index of the atmosphere that, especially in summer, may affect the propagation
- Rec. ITU-R P.1546 (1% time) for sea path, cold over the Atlantic Ocean and warm over the Mediterranean Sea

c. Threshold values

Assignments creating an interfering field strength below the thresholds of 38 dB $\mu$ V/m (land propagation path), 40 dB $\mu$ V/m (cold sea path), 42 dB $\mu$ V/m (warm sea path) over the neighbouring country co-block allotments should normally be agreed.

d. C/I parameters

Both administrations agree on the following parameters to be used for C/I analysis, based on Recommendation ITU-R BS.1660-9:

- Minimum median field strength for the wanted signal corresponding to portable outdoor/suburban delivery for 70% locations: 38.5 dB $\mu$ V/m at 1.5 m corresponding to 53 dB $\mu$ V/m at 10m<sup>3</sup>. The propagation mode for the wanted signal would be P.526-15 with an effective Earth radius of 8,500 km ( $K \approx 4/3$ ).
- Protection ratio: 12 dB
- Combined location correction factor: 3 dB (corresponding to 4 dB of standard deviation for location variability)

A spreadsheet with the calculation of these parameters is included below.

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<sup>3</sup> Applying a height correction factor of 14.4dB as it is described in Annex 2

## Calculation of the C/I parameters based on Rec. ITU-R BS.1660-9

Parameters for 70% locations are agreed. Parameters for 95% locations were considered during the meeting and are included for information.

The height loss correction factor  $C_{\text{height}}$  is calculated in accordance with Rec. ITU-R P.1546-5, Annex 5, section 9.

### Portable Outdoor 95%

f	200	MHz
d	5	km
$h_1$ (tx height)	100	m
$h_2$ (rx height)	1.5	m
sea	FAUX	-
urban	FAUX	-
$R_2$ (clutter height)	10	m
$C_{\text{height}}$	-14.4	dB

### Portable Outdoor 70%

f	200	MHz
d	5	km
$h_1$ (tx height)	100	m
$h_2$ (rx height)	1.5	m
sea	FAUX	-
urban	FAUX	-
$R_2$ (clutter height)	10	m
$C_{\text{height}}$	-14.4	dB

Minimum median field strength	42.98	dB $\mu$ V/m at 1.5 m
Minimum median field strength	57.37	dB $\mu$ V/m at 10 m
percentage of locations	95	%
$\mu$	1.645	
$\sigma_{res}$	4	dB
$\sqrt{2} \times \sigma_{res}$	5.657	
combined location correction factor	9.305	dB
PR	12	dB
calculated threshold	36.1	dB $\mu$ V/m at 10 m



Minimum median field strength	38.5	dB $\mu$ V/m at 1.5 m
Minimum median field strength	52.9	dB $\mu$ V/m at 10 m
percentage of locations	70	%
$\mu$	0.524	
$\sigma_{res}$	4	dB
$\sqrt{2} \times \sigma_{res}$	5.657	
combined location correction factor	2.966	dB
PR	12	dB
calculated threshold	37.9	dB $\mu$ V/m at 10 m



## Annex 5

### **Obsolete entries to the GE06 Plan**

Existing entries to the GE06 Plan listed in this annex should no longer be used, nor claim protection. They may be suppressed from the Plan.

Obsolete entries of France	Obsolete entries of Spain
 F TB5.txt	 E TB5.txt