



# MEMORANDUM OF UNDERSTANDING
# CONCLUDED BETWEEN
# FRANCE AND
# THE UNITED KINGDOM
# FOR FREQUENCY COORDINATION IN THE
# 890 - 915 MHz AND 935 - 960 MHz
# FREQUENCY BANDS

Cherbourg - 20th April 2000

## 1 - INTRODUCTION

1.1 - The 890-915 MHz (mobile transmit) and 935-960 MHz (base transmit) frequency bands are designated for a pan-European public digital land mobile system, "Global System for Mobile Communications"(GSM), according to the CEPT Recommendation T/R 75-02 ; Athens, 1990 and EC Directive 87/372/EEC.

1.2 - The Administrations of France and the United Kingdom signed an MoU on the frequency co-ordination of GSM on 27th April 1993. The MoU contained a number of transitional arrangements which are no longer relevant. Accordingly it was agreed to revise the MoU.

1.3 - In order to minimise problems of interference between the systems operating in neighbouring countries, it is necessary to establish agreements for regulatory and technical procedures for frequency coordination. These agreements should be designed to reduce the administrative procedures and permit a rapid deployment of GSM in the countries concerned.

1.4 - The Administration of France has licensed three GSM network operators. The Administration of the United Kingdom has licensed two GSM network operators.

## 2 - AGREEMENT

The Administrations of France and the United Kingdom agree to operate the coordination procedure described below.

## 3 – TECHNICAL PROVISIONS

3.1 - Preferential frequencies

The coordination procedure shall be based on the concept of preferential frequencies. The 890-915 MHz and 935-960 MHz frequency bands shall be split into groups of frequencies which shall be assigned equally between the two countries as "preferential bands".

3.2 - Trigger values

For the preferential and non-preferential bands, "trigger values" shall be defined as follows:

| | |
|---|---|
| Preferential frequencies | 26 dB(μV/m) |
| Non-preferential frequencies | 11 dB(μV/m) |

3.3 - Field strength prediction

The field strength shall be predicted by the method given in paragraph 3.6 below and shall take into account the percentage of time for which that field strength is expected to be exceeded.

3.4 - Use of the preferential bands

A base station may be established without coordination in a preferential band allocated to a country provided the predicted field strength at all points on the coastline of the other country does not exceed the higher of the two trigger values.

3.5 - Use of the non-preferential bands

A base station may be established without coordination on a frequency outside the preferential bands allocated to a country provided the predicted field strength at all points of the coastline of the other country does not exceed the lower of the two trigger values. Neither such a base station, nor the mobiles served by it, may claim protection from interference caused by a station of the neighbouring country respecting the conditions of paragraph 3.4 above.

3.6 - Propagation prediction

The method of field strength prediction shall be based upon ITU-R Recommendation PN 370-7, which shall be applied as follows:

3.6.1 The Propagation Curves used shall be:

50 % of time, 50 % of locations for land (Rec. PN 370- 7 fig. 9)
50 % of time, 50 % of locations for sea (Rec. PN 370- 7 fig. 13)

3.6.2 To allow for a receiving antenna mounted on a mobile, rather than a receiving antenna at 10 metres above ground assumed by ITU-R Recommendation PN 370-7, a correction factor of 10 dB shall be subtracted from the predicted field strength;

3.6.3 The height above mean terrain shall be determined for the base station in the directions of relevance. If this is less than 37.5 metres, then it shall be set to 37.5 metres;

3.6.4 Where the height above mean terrain lies between two values for which curves are given in ITU-R Recommendation PN 370-7, interpolation shall be used to determine the field strength in dBμV/m;

3.6.5 Where the path between the base station and the coast of the neighbouring country contains both land and sea, prediction shall be based on the interpolation method given in Annex 2 of ITU-R Report 239-7.

$E = (d_m/d) \times E(\text{ITU-R PN 370-7 sea, d}) + (d_t/d) \times E(\text{ITU-R PN 370-7 land, d})$

| | |
|---|---|
| $d_m$ | is the length of the sea path |
| $d_t$ | is the length of the land path |
| $d = d_m + d_t$ | is the total path length |
| E(ITU-R PN 370-7 land, d) | is the field strength value given by the curves of ITU-R Recommendation PN 370-7 applicable to land propagation for a path length (d) |
| E(ITU-R PN 370-7 sea, d) | is the field strength value given by the curves of ITU-R Recommendation PN 370-7 applicable to sea propagation for path length (d). |

3.6.6 The effective radiated power used to calculate predicted field strengths shall take into account any antenna gain due to directivity and down tilt in the directions of relevance.

3.7 - Exchange of information

Details of future base stations shall be made available to the administration of the neighbouring country, in accordance with the format given in Annex 2 to the Vienna Agreement currently in force, if the field strength of these stations, predicted by the agreed method, exceeds a level 5dB less than the trigger values for the preferential or non-preferential bands. These details shall also be made available if the administration of the neighbouring country considers, after taking measurements in accordance with Appendices 2 and 3 of Annex 7 to the current Vienna Agreement, that the trigger values are being exceeded.

3.8 - Alternative coordination procedure

The Administrations of France and the United Kingdom commit themselves to ensuring that their systems respect the trigger values given in paragraph 3.2 above, predicted by the method given in paragraph 3.3. However, there might be an occasional need to establish stations such that the field strength at the neighbouring coastline will exceed the trigger values. In such cases, administrations may seek coordination according to the procedure described in paragraph 4 below.

## 4 – PROCEDURE AND EXCHANGE OF INFORMATION FOR COORDINATION PURPOSES

Exchanges of information for coordination purposes shall be in the format set out in Annex 2 to the Vienna Agreement currently in force and in accordance with the procedures described in Annex 1 to the present MoU.

## 5 - PREFERENTIAL BANDS

The allocation of preferential bands between the United Kingdom and France shall be:

| | | |
|---|---|---|
| GSM channels | 1 - 8 | UNITED KINGDOM |
| GSM channels | 9 - 39 | FRANCE |
| GSM channels | 40 - 71 | UNITED KINGDOM |
| GSM channels | 72 - 87 | FRANCE |
| GSM channels | 88 - 109 | UNITED KINGDOM |
| GSM channels | 110 - 124 | FRANCE |

## 6 - CHANNEL TUNNEL

Each Administration considers it desirable to provide GSM cover in the Channel Tunnel. To this end, each Administration may use its preferential channels in accordance with paragraph 5. The provisions of paragraphs 3.3 to 3.8 are not applicable in this case.

## 7 - REVIEW AND FOLLOW UP OF THE MEMORANDUM OF UNDERSTANDING

Either Administration may request a review of this MoU. Any part of this MoU may be revised in the light of future developments and experience in the operation of networks covered by this MoU.

## 8 - TERMINATION OF THE PREVIOUS MEMORANDUM OF UNDERSTANDING

The Memorandum of Understanding between France and the United Kingdom for frequency coordination in the 890 - 915 MHz and 935 - 960 MHz frequency bands designated for the GSM system, signed at Paris on 27 April 1993 shall be terminated on the date when this MoU comes into force.

## 9 - WITHDRAWAL FROM THE MEMORANDUM OF UNDERSTANDING

Either Administration may withdraw from this Memorandum of Understanding subject to 6 months notice.

## 10 - LANGUAGE OF THE MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding is drafted in the French and English languages, both languages having equal authority.

The original version in French is laid down with the Agence Nationale des Fréquences in Maisons-Alfort, the original version in English is laid down with the United Kingdom Radiocommunications Agency in London.

## 11 - DATE OF ENTRY INTO FORCE

This Memorandum of Understanding will enter into force on 1st May 2000.

Done at Cherbourg on 20th April 2000

| For FRANCE | For the UNITED KINGDOM |
| --- | --- |
| M. MONNOT | B. LAST |

MEMORANDUM OF UNDERSTANDING
CONCLUDED BETWEEN
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FOR FREQUENCY COORDINATION IN THE
890 – 915 MHz AND 935 – 960 MHz FREQUENCY BANDS

## ANNEX 1
## COORDINATION PROCEDURE APPLICABLE TO RELATIONS BETWEEN FRANCE AND THE UNITED KINGDOM

1.- Frequencies must be co-ordinated in accordance with the conditions defined in the current Vienna Agreement.

2.- An Administration wishing to bring a station into service must submit a request for co-ordination with the other Administration by way of notice. This request must include the characteristics described in paragraph 4-1 of CEPT Recommendation T/R 25-08.

3.- If, following a technical evaluation of the request for co-ordination, the Administration concerned requires information which is missing or which needs amplification, it shall request this information within 20 days following receipt of the request for co-ordination.

4.- Once it has received all the information regarding this request for co-ordination, the Administration concerned shall evaluate the information as specified in this Agreement. It shall notify the requesting Administration of the result of the evaluation within 45 days.

5.- If the Administration which initiated the co-ordination procedure has not received a reply within 45 days, it shall send a reminder letter. The Administration concerned must reply to this reminder within 30 days.

6.- If the Administration concerned has still not replied within the period specified in point 5, it shall be deemed to have given its agreement and the station shall be deemed to have been co-ordinated.

7.- Any frequency assignment made after positive co-ordination shall be notified to the Administration concerned within 180 days after agreement has been received. This notification of assignment shall require the frequency to be entered in the Frequency Register. If no assignment is granted within 180 days, the Administration concerned shall send a reminder to the Administration which requested the co-ordination. If there is no notification within a further 30 days the request for co-ordination shall be deemed null and void.

8.- An Administration wishing to modify the technical characteristics relating to stations entered in the Frequency Register shall notify the Administration concerned to that effect. If such modification increases the likelihood of interference in the neighboring country, co-ordination is required. If the interference position is unchanged or improved, the modification need simply be brought to the notice of the Administration concerned. The entry in the Frequency Register shall be amended accordingly.