

**MEMORANDUM OF UNDERSTANDING ON
FREQUENCY CO-ORDINATION BETWEEN
FRANCE
AND
THE UNITED KINGDOM
IN THE FREQUENCY BANDS
2500 - 2690 MHz
TO BE APPLIED
IN THE AREA OF
THE CHANNEL ISLANDS
AND FRANCE**



1. INTRODUCTION

- 1.1. This Memorandum of Understanding (MoU) describes the procedures for the coordination of radio services between France and the Channel Islands in the frequency band 2500 to 2690 MHz.
- 1.2. In order to facilitate the deployment of systems operating in neighbouring countries, it is necessary to establish, by agreement, regulatory and technical procedures for frequency co-ordination. Moreover, this agreement is designed to reduce the administrative procedures in the frequency bands in the countries concerned.
- 1.3. This MoU applies to the area of the Channel Islands and France
- 1.4. The European commission decision 2008/477/EC¹ designates the 2500-2690 MHz band for terrestrial systems capable of providing electronic communications services according and harmonise the conditions for its availability and efficient use in the Community.
- 1.5. In the Channel Islands the frequency band 2500-2690 MHz is expected to be awarded on a technology neutral basis, following a consultation process.
- 1.6. France is authorised by the European community² to postpone the full implementation of the Decision 2008/477/EC until 31 May 2014. In the regions close to UK and Channel islands, the frequency band 2500 to 2690 MHz is currently used for military radiolocation services, tactical and infrastructure relay links. These will be switched off by summer 2012.
- 1.7. Accordingly, the Administrations of the UK and France have agreed the co-ordination procedures in this MoU.
- 1.8. The co-ordination procedure is based on the principle of equitable access to the spectrum resource.
- 1.9. Ofcom is the Administration of the United Kingdom responsible for all relations with France concerning this MoU.
- 1.10. The Agence Nationale des Fréquences (ANFR) is the Administration of France responsible for all relations with the UK concerning this MoU.

¹ Commission decision 2008/477/EC of 13 June 2008 on the harmonisation of the 2 500-2 690 MHz frequency band for terrestrial systems capable of providing electronic communications services in the Community

² Commission decision 2009/740/EC of 6 October 2009 granting a derogation to France pursuant to Decision 2008/477/EC on the harmonisation of the 2 500-2 690 MHz frequency band for terrestrial systems capable of providing electronic communication services in the Community



2. COMMITMENT OF THE ADMINISTRATIONS

- 2.1. The Administration of France and the UK are committed to ensuring that the radio-communication stations operating in the band 2500-2690 MHz, respect the limits for establishment of base stations without co-ordination given at paragraph 3.1, unless the stations are specifically exempt from the coordination procedure in accordance with paragraph 4.
- 2.2. The Administration of France and the UK are committed to take into account the future EC decision on the band 2500-2690 MHz as well as any EC derogation on a transitional period in France.

3. CRITERIA FOR COORDINATION

- 3.1. Within the frequency band 2500-2690 MHz, a radio-communication station may be operated, established or modified in a country, without co-ordination with the neighbour country, provided that the predicted field strength of each carrier produced by that station does not exceed the threshold of 21 dB μ V/m in a bandwidth of 5 MHz at and beyond the coast line of the neighbouring country at a height of 3 m above ground level.
- 3.2. Radio-communication stations for which the predicted field strength exceeds the values given in 3.1 must be co-ordinated in accordance with paragraph 6, except where an arrangement exists between operators as described in paragraph 4.
- 3.3. To establish the predicted field strength produced by a station, the methodology set out at paragraph 5 shall be employed.
- 3.4. In the case of time division duplex technology the interference power shall be the power, during the active part of the signal, in the stated bandwidth.

4. ARRANGEMENTS BETWEEN OPERATORS

- 4.1. A "Framework" MoU between the administrations of France and the United Kingdom, which enables planning arrangements between mobile operators, subject to agreement of the Administrations, was signed on 13 October 1999³. The administrations of France and the United Kingdom agree to extend the applicability of this MoU to all operators of systems in the frequency bands 2500-2690 MHz subject of the present MoU.
- 4.2. To facilitate reasonable and timely development of their systems, licensees are encouraged to develop Arrangements in accordance with the Framework MoU of 13 October 1999.
- 4.3. Operators may only negotiate Arrangements concerning the common part of those frequency bands for which they have been licensed by the National Administration. The provisions in the Arrangements shall not result in an impairment of the authorised use of radio frequencies by third parties not involved in the Arrangements.

³ Agreement between the administrations of France and the United Kingdom concerning the approval of planning arrangements between mobile radio communications network operators. 13 October 1999

- 4.4. In order to facilitate Arrangements between operators, each Administration will provide names and point of contact information for the relevant licensees, subject to the agreement of the licensees.

5. PREDICTION OF PROPAGATION

The field prediction method shall be according to the latest version of Recommendation ITU-R P. 1546 ⁴

With parameters:

- 10% of the time
- 50% of locations
- Height of the receiver antenna 3m

Taking account of:

- Terrain profile for the base station in all main directions
- Type of terrain (e.g. land, sea, mixed path)
- Effective radiated field strength
- Antenna tilt and azimuth

Including model components:

- Mixed land/sea paths
- Receiving/mobile antenna height
- Terrain clearance angle

And standard values:

- $\Delta N = 40$ (N0m-N1000m)

6. CO-ORDINATION PROCEDURE

- 6.1. Exchanges of information for coordination/notification purposes shall be in the format set out in the HCM agreement⁵.
- 6.2. A coordination request must be sent by the licensee through the Administration responsible for its authorisation.
- 6.3. The coordination procedure shall follow the one described in the HCM Agreement.

⁴ Recommendation ITU-R P.1546, Method for point-to-area predictions for terrestrial services in the Frequency range 30 MHz to 3 000 MHz

⁵ Agreement between the Administrations of ... on the Coordination of frequencies between 29.7 MHz and 43.5 GHz for fixed service and land mobile service (HCM Agreement)

https://www.hcm-agreement.eu/html/verwaltung/index_uag_mobilfunkdienst.htm

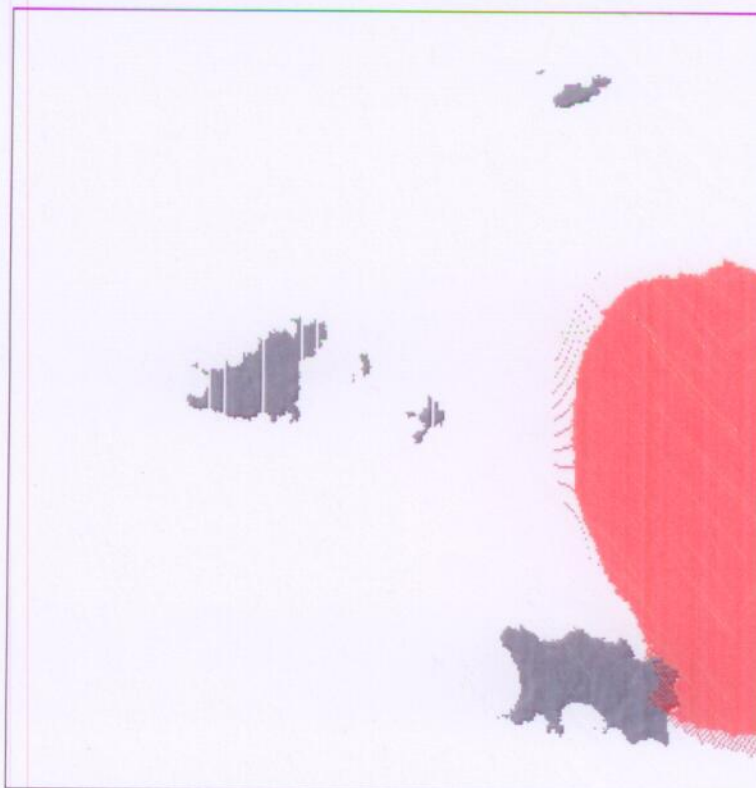
- 6.4. In the event of interference between authorised users of the band 2500-2690 MHz in France and the UK, the affected users shall exchange information between themselves with a view to resolving the interference by mutual agreement. A report of the interference and the details of the information exchanged shall be sent to both Administrations. The Administrations of France and the UK agree to facilitate the exchange of information between authorised users of the band.

7. OTHER RADIO-COMMUNICATION IN FRANCE ALREADY IN SERVICE

- 7.1. Military infrastructure (point to point) relay links may be used over France. These relay links will gradually cease operating in the frequency range 2500-2690MHz until complete closure in May 2014 (February 2012 for Basse-normandie and October 2013 for Bretagne)
- 7.2. Using the prediction parameters as set out in § 5 above, the 21 dB μ V/m threshold is not exceeded at the Channel Islands coastline or beyond, for the point to point military services as they exist at the time of agreement of this MoU, except as indicated in Fig 1.

Figure 1 Estimated field strength of French radio relay links on Channel islands

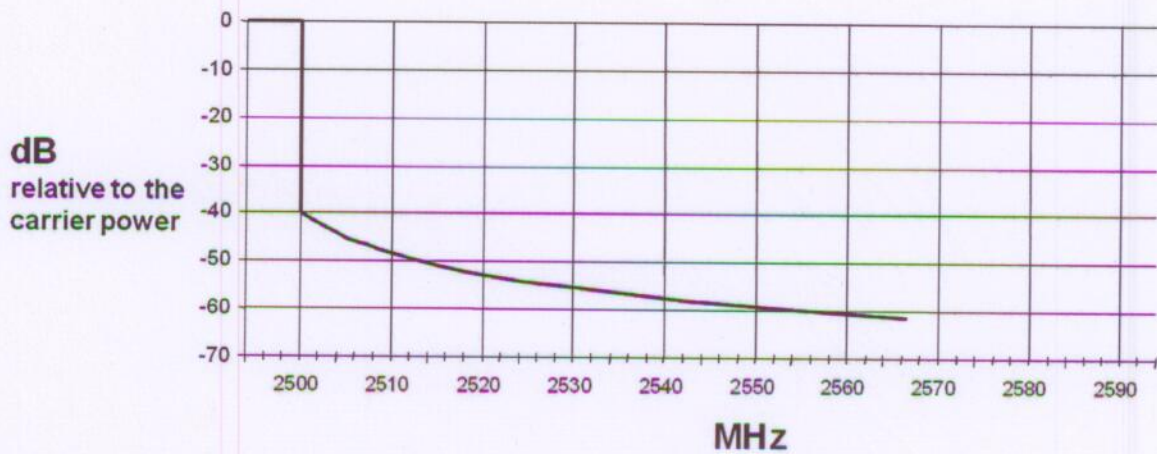
Field strength = 21dB μ V/M in a bandwidth of 5MHz
At a height of 3m



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- 7.3. Radars are currently operating in northern France with field strengths which may exceed 21 dB μ V/m in the UK . These radars operate in frequencies below 2500 MHz. However the band 2500-2520 MHz may also be used in case of national emergency. These radars operate continuously with a 360° sweep
- 7.4. Other radars which operate in the frequency band 2500 to 2520 MHz will not be used at any location in France such that their field strength at the Channel islands coast line or beyond is greater than or equal to 21 dB μ V/m, except in cases of national emergency
- 7.5. The nominal emission mask of the radar is given in Figure 2, in line with Annex 8 of ITU R Recommendation SM 15416.

Figure 2 Nominal radar emission mask



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⁶ Rec. ITU-R SM.1541-2 1 Recommendation ITU-R SM.1541-2, Unwanted emissions in the out-of-band domain

- 7.6. Coverage plots for radars in France referred to § 7.3 are given in figure 3, which would apply in the frequency range 2500-2520MHz , with modelling parameters according to par 5 .

Figure 3 Estimated on axis field strength of French radio location services on Channel islands

Field strength = 21dB μ V/M in a bandwidth of 5MHz
At a height of 3m



- 7.7. Using the prediction parameters as set out in § 5 above, the 21 dB μ V/m threshold is not reached or exceeded at any point at the Channel Islands coastline or beyond, for the off axis beam of French radio location services identified in Fig 3.

8. REVIEW OF MoU

- 8.1. The coordination threshold and prediction methods defined in this MoU may be reviewed in the light of experience of operation of networks in both countries and future prediction developments (noting that, the coordination threshold as provided in §3.1 at 21 dB μ V/m/5 MHz is too low to permit the operation of terrestrial mobile networks near the border).
- 8.2. This MoU may be updated following the adoption of an EC decision, an ECC or CEPT Recommendation, relevant to the band 2500-2690MHz and any related derogation requested by France, or the award of licences to use the frequency band 2500-2690MHz either in the UK or in France.
- 8.3. This MoU may be reviewed following the closure of military services in France.

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9. **TERMINATION OF THE MEMORANDUM OF UNDERSTANDING**

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

10. **DATE OF ENTRY INTO FORCE**

This Memorandum of Understanding shall enter into force on 1st December 2010.

For the administration of FRANCE

Antoine Rigole

Signed at Paris on 4th November 2010



For the UNITED KINGDOM administration

Ray McConnell

Signed at London on 9 Nov. 2010

