



Commission for
Communications Regulation

Memorandum of Understanding

Agreed MoU with the UK on the 800 MHz band

Reference: ComReg 12/47

Version: Final

Date: 23/05/2012

An Coimisiún um Rialáil Cumarsáide

Commission for Communications Regulation

Abbey Court Irish Life Centre Lower Abbey Street Dublin 1 Ireland

Telephone +353 1 804 9600 Fax +353 1 804 9680 Email info@comreg.ie Web www.comreg.ie



**MEMORANDUM OF UNDERSTANDING ON
FREQUENCY COORDINATION BETWEEN
THE REPUBLIC OF IRELAND
AND
THE UNITED KINGDOM
IN THE FREQUENCY BAND
790 – 862 MHz**

1. INTRODUCTION

- 1.1. This Memorandum of Understanding (MoU) describes the procedures for the coordination of radio services, other than broadcasting, between the Republic of Ireland (RoI) and the United Kingdom (UK) in the frequency band 790 – 862 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. In the UK, the frequency band 790 – 862 MHz is expected to be awarded on a service and technology neutral basis, in accordance with decisions to be made by Ofcom, following a consultation process.
- 1.4. In the RoI, it is intended that the 790 – 862 MHz band will become available as part of the Digital Dividend post analogue TV switch off (“ASO”) in Ireland. In Ireland and the UK, use of the 790 – 862 MHz band will be in conformance with the European harmonised technical conditions of use as set out in European Commission Decision 2010/267/EU¹.
- 1.5. The preferred harmonised CEPT channelling arrangement for the 790 – 862 MHz band is as follows:

790-791	791-796	796-801	801-806	806-811	811-816	816-821	821 – 832	832-837	837-842	842-847	847-852	852-857	857-862
Guard band	Downlink						Duplex gap	Uplink					
1MHz	30 MHz (6 blocks of 5 MHz)						11 MHz	30 MHz (6 blocks of 5 MHz)					

- 1.6. Ofcom is the Administration of the United Kingdom responsible for all relations with the RoI concerning this MoU.
- 1.7. The Commission for Communications Regulation (ComReg) is the Administration of the RoI responsible for all relations with the UK concerning this MoU.
- 1.8. Accordingly, the Administrations of the UK and the RoI have agreed the co-ordination procedures in this MoU.
- 1.9. This MoU applies in the territories of The Republic of Ireland and the United Kingdom.
- 1.10. The co-ordination procedure is based on the principle of equitable access to the spectrum resource.

¹ Commission Decision of 6 May 2010 (2010/267/EU), on harmonised technical conditions of use in the 790 -862 MHz frequency band for terrestrial systems capable of providing electronic communications services in the European Union: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32010D0267:EN:HTML>

- 1.11. Coordination of FDD services in the 790 – 862 MHz band is based on the protection requirements for non preferential frequency blocks given in Annex 1 of ECC Recommendation (11)04².

2. COMMITMENT OF THE ADMINISTRATIONS

- 2.1. The Administrations of the RoI and the UK are committed to ensuring that the radio communication stations operating in the band 790-862 MHz, respect the limits given at paragraph 3, unless the stations are specifically exempt from the coordination procedure in accordance with paragraph 4.

3. CRITERIA FOR COORDINATION

- 3.1. Suitable coordination arrangements, outlined in paragraphs 3.2 and 3.3, are derived from Annex 1 of ECC Recommendation (11)04.
- 3.2. Within the frequency band 791-832 MHz, stations of FDD Systems may be operated, established or modified in a country, without co-ordination with the neighbour country, provided that the predicted field strength produced by a cell (all transmitters within the sector) does not exceed the threshold of **55 dB μ V/m in a bandwidth of 5 MHz at a height of 3 m above ground level at the coast or border line of the neighbouring country**, and **29 dB μ V/m in a bandwidth of 5 MHz at a height of 3m above ground at a distance of 9 km** inside the neighbouring country.

In the case that LTE is deployed on both sides of the border, the field strength levels may be increased to **59 dB μ V/m in a bandwidth of 5 MHz**, and **41 dB μ V/m in a bandwidth of 5 MHz at 6 km**

- 3.3. Within the frequency bands 791- 821 MHz and 832 – 862 MHz, stations of TDD Systems may be operated, established or modified in a country, without co-ordination with the neighbour country, provided that the predicted mean field strength produced by a cell (all transmitters within the sector) does not exceed the threshold of **15 dB μ V/m in a bandwidth of 5 MHz at 10% time, 50% of locations at a height of 3 m above ground level at the coast or border line of the neighbouring country**.
- 3.4. Base stations, for which the predicted field strength exceeds the values given in 3.2 or 3.3, must be co-ordinated in accordance with paragraph 7, except where stations are listed in paragraph 6 or an arrangement exists between operators as described in paragraph 4.
- 3.5. To establish the predicted field strength produced by a station, the methodology set out at paragraph 5 shall be employed.
- 3.6. 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.
- 3.7. Systems operating in border areas are required to co-ordinate physical-layer cell identities in accordance with Annex 5 of ECC Recommendation (11)04.

² ECC Recommendation (11)04: Frequency planning and frequency coordination for terrestrial systems for mobile/fixed communication networks (MCFN) capable of providing electronic communications services in the frequency band 790-862 MHz.

4. ARRANGEMENTS BETWEEN OPERATORS

- 4.1. An Agreement between the administrations of the Republic of Ireland and the United Kingdom, which enables planning arrangements between mobile operators, subject to agreement of the Administrations, was brought into force on 01 May 2005³. The administrations of the Republic of Ireland and the United Kingdom agree to extend the applicability of this Agreement to all operators of systems in the frequency bands 791 - 832 MHz.
- 4.2. To facilitate reasonable and timely development of their systems, licensees are encouraged to develop arrangements in accordance with the Agreement of 01 May 2005.
- 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.
- 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. 1546⁴, With parameters:

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

Taking account of:

- Terrain profile (effective height) 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

³ Agreement between the administrations of the Republic of Ireland and the United Kingdom concerning the approval of planning arrangements between mobile radio communications network operators.

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

- Receiving/mobile antenna height
- Terrain clearance angle

And standard values: DeltaN = 40 (N0m-N1000m)

6. CO-ORDINATED STATIONS

The stations listed below have been agreed by both Administrations to be coordinated. Any subsequent change in the parameters given in the table shall void any acceptance of co-ordination for the corresponding station or stations.

Name	Individual Channel bandwidth	Modulation	Centre Frequency	Lat	Long	East	North	Ground H AMSL (m)	H AGL (m)	EIRP dBm	Antenna Manufacturer reference	Pol .	3dB BW Degs	Az Degs E of N.

7. CO-ORDINATION PROCEDURE

- 7.1. Exchanges of information for co-ordination/notification purposes shall be in the format set out in Annex 2A of the HCM agreement (revised at Vilnius 2005) ⁵.
- 7.2. A co-ordination request must be sent by the licensee through the Administration responsible for its authorisation.
- 7.3. The co-ordination procedure shall follow the one described in the HCM Agreement.
- 7.4. In the event of interference between authorised users of the band 790-862 MHz in the RoI 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 who can, if requested, advise on resolution.. The Administrations of the RoI and the UK agree to facilitate the exchange of information between authorised users of the band.

⁵ Agreement between the Administrations of ... on the Coordination of frequencies between 29.7 MHz and 39.5 GHz for fixed service and land mobile service (HCM Agreement) Vilnius, 2005
http://hcm.bundesnetzagentur.de/http/englisch/verwaltung/index_europakarte.htm

8. REVIEW OF MoU

- 8.1. The co-ordination 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.
- 8.2. This MoU may be updated following the adoption of any international decisions, directives or recommendations relevant to the band 790 - 862 MHz, or the results of awards of licences to use the frequency band 790 - 862 MHz.

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 01 March 2012

For the administration of the REPUBLIC OF IRELAND

[... ✂ ... Signature deleted]

Signed at Dublin on 28 February 2012

For the administration of the UNITED KINGDOM

[... ✂ ... Signature deleted]

Signed at London on 29 February 2012.