

# **TECHNICAL ARRANGEMENT**

**between**

**the Communications Regulatory Authority of the Republic  
of Lithuania and the Office of Electronic Communications  
of the Republic of Poland**

**Concerning the Use of the Frequency Bands  
1920-1980 MHz / 2110-2170 MHz  
for Terrestrial Systems of Mobile/Fixed Communication  
Networks (MFCN) in Border Areas**

**Nida, 24 August 2017**

## 1. Preamble

According to Article 6 of the ITU Radio Regulations and in the framework of the "HCM Agreement"<sup>1</sup>, representatives of the Communications Regulatory Authority of the Republic of Lithuania and the Office of Electronic Communications of the Republic of Poland (hereinafter referred to as the Parties) have concluded this Technical Arrangement Concerning the Use of the Frequency Bands 1920-1980 MHz / 2110-2170 MHz for Mobile/Fixed Communications Networks (MFCN)<sup>2</sup> in the Border<sup>3</sup> Areas (hereinafter referred to as the Arrangement) between the Republic of Lithuania and the Republic of Poland with the aim of optimizing the use of the frequency bands and avoiding mutual interference on a mutually coordinated basis.

The frequency bands 1920-1980 MHz and 2110-2170 MHz are designated for terrestrial systems capable of providing electronic communications services according to *Commission Implementing Decision of 5 November 2012 on the harmonisation of the frequency bands 1920-1980 MHz and 2110-2170 MHz for terrestrial systems capable of providing electronic communications services in the Union (2012/688/EU)*.

This Arrangement supersedes the provisions of the "Agreement between the Telecommunications Administrations of Lithuania and Poland on the Use of the Frequency Bands 1900-1980 MHz, 2010-2025 MHz and 2110-2170 MHz for Stations of UMTS System of the Land Mobile Service in the Border Areas" (done at Nida, 28 August 2009) for the frequency bands 1920-1980 MHz and 2110-2170 MHz.

## 2. Principles

- 2.1. This Arrangement is based on the concept of coordination field strength levels for base stations, allocation of preferential and non-preferential codes (code groups for UMTS systems and Physical Cell Identifiers<sup>4</sup> (PCI) for LTE systems) as described in ERC Recommendation 01-01 of 5<sup>th</sup> February 2016 "Cross-border coordination for mobile/fixed communications networks (MFCN) in the frequency bands: 1920-1980 MHz and 2110-2170 MHz" (hereinafter referred to as ERC/REC 01-01) on the principle of the equal access to spectrum by both Parties.
- 2.2. The frequency bands 1920-1980 MHz / 2110-2170 MHz shall be used for FDD<sup>5</sup> mode operation: mobile stations transmit and receive respectively in the frequency bands 1920-1980 MHz / 2110-2170 MHz, base stations transmit and receive respectively in the frequency bands 2110-2170 MHz / 1920-1980 MHz. Such frequency arrangement conforms to ECC Decision (06)01 (amended in 2<sup>nd</sup> November 2012) "The harmonised utilisation of the bands 1920-1980 MHz and 2110-2170 MHz for mobile/fixed communications networks (MFCN) including terrestrial IMT systems".
- 2.3. This Arrangement covers coordination of base stations.

## 3. Use of frequencies

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<sup>1</sup> Agreement between the Administrations of Austria, Belgium, the Czech Republic, Germany, France, Hungary, the Netherlands, Croatia, Italy, Liechtenstein, Lithuania, Luxembourg, Poland, Romania, the Slovak Republic, Slovenia and Switzerland on the co-ordination of frequencies between 29.7 MHz and 43.5 GHz for the fixed service and the land mobile service. Agreed by correspondence in 2016.

<sup>2</sup> Mobile/fixed communications networks (MFCN) include IMT and other communications networks in the mobile and fixed services.

<sup>3</sup> In the context of this Arrangement the term "border" is understood as the international borderline between the countries of the Parties.

<sup>4</sup> Coordination of the Physical Cell Identifiers (PCI) is only needed in case of use of the LTE systems by both Parties when the channel centre frequencies are aligned independently of the channel bandwidth.

<sup>5</sup> FDD - Frequency Division Duplex.

- 3.1. Each Party may use the frequency bands 1920-1980 MHz / 2110-2170 MHz for UMTS FDD and LTE FDD systems without coordination with the other Party if the predicted mean field strength of each carrier produced by a base station at the border and at a distance of 6 km from the border inside the neighbouring country at a height of 3 m above ground level does not exceed the field strength levels given in Annex 1 to this Arrangement.
- 3.2. Allocation of preferential and non-preferential code groups for UMTS FDD systems between Parties is given in Annex 2 to this Arrangement.
- 3.3. Allocation of preferential and non-preferential Physical Cell Identifiers (PCI) for LTE FDD systems between Parties is given in Annex 3 to this Arrangement.
- 3.4. If frequency block size is other than 5 MHz, a correction, calculated by the formula  $10 \times \lg(\text{frequency block size} / 5 \text{ MHz})$ , dB, shall be added to the field strength values indicated in item 3.1.
- 3.5. Each Party shall notify the other Party concerning the beginning or cancellation of use of UMTS FDD and LTE FDD systems in the frequency bands 1920-1980 MHz / 2110-2170 MHz located at a distance less than 20 km from border indicating the frequency bands or channels concerned.

#### **4. Coordination procedure**

- 4.1. If the predicted mean field strength value of any carrier produced by the base station exceeds the levels indicated in item 3.1, the frequency assignment shall be coordinated with the other Party.
- 4.2. The period of coordination shall not exceed 45 days from the date of receiving the request from the requesting Party. The affected Party shall notify about the results of request evaluation. If no reply was received, the requesting Party shall send a reminder. The affected Party that failed to respond within 20 days following the communication of the reminder shall be deemed to have given its consent to the coordination of frequency assignment.
- 4.3. Coordination requests shall be drawn up according to Annex 6 of the ERC/REC 01-01. The exchange of coordination information shall take place by e-mail or other electronic means appropriate to both Parties.
- 4.4. Complaints on harmful interference shall be based on the median value of measurements of field strength, performed at a receiving antenna height of 3 m above ground at least in two different points over a distance of at least 100 m along the border.
- 4.5. Reports on harmful interference shall be presented in accordance to Appendix 10 of the ITU Radio Regulations and processed according to Article 15 of the ITU Radio Regulations. The Parties shall take all possible measures in order to eliminate harmful interference.
- 4.6. For the field strength calculations the tool of the HCM Agreement shall be applied (using appropriate calculation mode). The Parties may apply other calculation tools using the latest version of ITU-R Recommendation P.1546 "Method for point-to-area predictions for terrestrial services in the frequency range 30 MHz to 3000 MHz" for 10% of time and 50% of locations including clutter data. In case of any differences in results of calculations the official version of HCM Program shall be used as a reference.

## **5. Revision and cancellation**

- 5.1. This Arrangement may be revised at any time on the initiative of any Party with the consent of the other Party.
- 5.2. This Arrangement may be cancelled by a mutual decision of both Parties on terms and conditions adopted by the Parties or by a decision of one Party notifying the other Party on its intention at least six months before.

## **6. Language of the Arrangement**

- 6.1. This Arrangement has been drawn in two identical copies in English language, one for the Republic of Lithuania and one for the Republic of Poland.

## **7. Date of entry into force**

- 7.1. This Arrangement shall come into force on the date of signing it by both Parties.

Nida, 24 August 2017

On behalf of  
the Communications Regulatory Authority of  
the Republic of Lithuania

A stylized signature in blue ink, consisting of a large loop at the top and a series of horizontal strokes below.

Feliksas Dobrovolskis

On behalf of  
the Office of Electronic Communications of  
the Republic of Poland

A stylized signature in blue ink, featuring a large 'W' and 'S' followed by a series of loops and a long horizontal stroke.

Wiktor Sęga

**Coordination field strength levels for land mobile base stations  
in the frequency bands 1920-1980 MHz / 2110-2170 MHz  
between the Republic of Lithuania and the Republic of Poland**

Predicted mean field strength level, dB $\mu$ V/m	FDD vs FDD case (channel bandwidth – 5 MHz)		
	Centre frequencies aligned		Centre frequencies not aligned
	Preferential codes used	Non-preferential codes used	
At the border	65	37	65
At a distance of 6 km inside the territory of the other Party	37	not applicable	37

**Allocation of preferential codes for UMTS (UTRA FDD) system  
in the frequency bands 1920-1980 MHz / 2110-2170 MHz in the border areas  
between the Republic of Lithuania and the Republic of Poland<sup>6</sup>**

<b>Code set</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
<b>Code group</b>	0 to 10	11 to 20	21 to 31	32 to 42	43 to 52	53 to 63
<b>Set preferential to<sup>7</sup></b>	LTU	LTU	LTU	POL	POL	POL

<sup>6</sup> According to Annex 3 of ERC/REC 01-01.

<sup>7</sup> LTU – the Republic of Lithuania, POL – the Republic of Poland; preferential codes to one Party are non-preferential to the other Party.

**Allocation of preferential Physical Cell Identifiers (PCI) for LTE system  
in the frequency bands 1920-1980 MHz / 2110-2170 MHz in the border areas  
between the Republic of Lithuania and the Republic of Poland<sup>8</sup>**

<b>Set</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
<b>PCI</b>	0..83	84..167	168..251	252..335	336..419	420..503
<b>Set preferential to<sup>9</sup></b>	LTU	LTU	LTU	POL	POL	POL

<sup>8</sup> According to Annex 5 of ERC/REC 01-01.

<sup>9</sup> LTU – the Republic of Lithuania, POL – the Republic of Poland; preferential PCIs to one Party are non-preferential to the other Party.