

AGREEMENT

between administrations of

the Republic of Lithuania and the Republic of Poland

**on frequency planning and frequency usage at border
areas for terrestrial systems capable of providing
electronic communication services in the frequency band
2500-2690 MHz**

Nida, 22 June 2012

1. Introduction

According to the Article 6 of ITU Radio Regulations and in the framework of the "HCM Agreement"¹ the representatives of the administrations of the Republic of Lithuania and Republic of Poland have concluded the present Agreement concerning the use of the 2500-2690 MHz frequency band with the aim to avoid mutual interference and optimize the use of the above-stated frequency band in the border areas on the mutually agreed basis (hereinafter referred to as the Agreement).

The frequency band 2500-2690 MHz is designated for terrestrial systems capable of providing electronic communications services according to *COMMISSION DECISION (2008/477/EC) of 13th June 2008 on the harmonisation of the 2500-2690 MHz frequency band for terrestrial systems capable of providing electronic communications services in the Community* (notified under document number C(2008) 2625).

2. Principles of frequency planning and frequency usage at border areas

The administrations of the Republic of Lithuania and the Republic of Poland have agreed on the following frequency planning and frequency usage procedures based on the concept of equal access probability. This concept enables equitable coverage for two or more networks using the same frequency band with the same or different digital technologies in geographically adjacent areas without coordination. Operation of stations in the respective border area exceeding the specified field strength values after performing traditional frequency coordination would disturb the balance in the respective area and is therefore not desirable.

The following principles apply to frequency utilisation by terrestrial systems capable of providing electronic communications services in geographically adjacent areas in cases where concerned administrations agree to use the concept of equal access probability:

- Field strength values are defined inside a reference frequency block of 5 MHz.
- The field strength calculations shall take into account the sum of all signals radiated from the respective antenna sector within the reference frequency block. The respective field strength values for each signal should be applied by each antenna sector and can be deduced by reducing the limit proportionally to the bandwidth portions falling into the reference frequency block (reduction factor = $10 \times \log(\text{bandwidth portion} / 5 \text{ MHz})$).

In order to assure equitable coverage and equal access probability to the spectrum in border areas even with different transmission technologies, and to enhance the efficiency of spectrum usage, the principles and field strength limits as given in chapter 3 of this Agreement shall be respected by all network operators concerned.

3. Technical provisions

The frequency arrangement for terrestrial systems capable of providing electronic communications services conforms to the frequency arrangement in accordance with ECC/DEC(05)05.

The frequency band 2500–2690 MHz is divided into three parts:

- a) 2500–2570 MHz,

¹ 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. Zagreb, 30 September 2010

- b) 2570–2620 MHz,
- c) 2620–2690 MHz.

The bands a) and c) are paired bands and may be used for FDD systems.

The duplex spacing for FDD operation shall be 120 MHz with terminal station transmission (uplink) located in band a) starting at 2500 MHz (extending to a maximum limit of 2570 MHz) and base station transmission (downlink) located in band c) starting at 2620 MHz (extending to a maximum limit of 2690 MHz).

The band b) can be used by TDD systems or other usage modes complying with the applicable Block Edge Masks (BEM) given in COMMISSION DECISION (2008/477/EC) of 13th June 2008.

3.1 Frequency utilisation in the bands a) and c)

Base stations of FDD systems may be operated if the field strength produced at a height of 3 m above ground does not exceed the value of 65 dB μ V/m in the reference bandwidth of 5 MHz at the border line and does not exceed the value of 37 dB μ V/m in the reference bandwidth of 5 MHz at a line of 6 km beyond the border.

In case LTE system is deployed on both sides of the border the field strength produced at a height of 3 m above ground does not exceed the value of 65 dB μ V/m in the reference bandwidth of 5 MHz at the border line and does not exceed the value of 49 dB μ V/m in the reference bandwidth of 5 MHz at a line of 6 km beyond the border.

3.2. Frequency utilisation in band b)

3.2.1. Frequency utilisation in band b) for synchronised networks

Base stations of synchronised TDD systems may be operated if the produced field strength at a height of 3 m above ground does not exceed the value of 65 dB μ V/m in the reference bandwidth of 5 MHz at the border line, and does not exceed the value of 37 dB μ V/m in the reference bandwidth of 5 MHz at a line of 6 km beyond the border. Interference-free operation with these limits is only possible for synchronised networks.

3.2.2. Frequency utilisation in band b) for unsynchronised networks

Base stations of unsynchronised TDD systems may be operated if the field strength produced at a height of 3 m above ground does not exceed the value of 21 dB μ V/m in the reference frequency bandwidth of 5 MHz at the border line.

3.3. Physical Cell Identifier (PCI) coordination

PCI coordination for LTE systems is only needed when channel centre frequencies are aligned independent of the channel bandwidth. Each Party should use PCI sets for LTE system in the border areas in accordance with Annex to this Agreement.

Each Party may use all PCI available if the field strength produced at a height of 3 m above ground does not exceed the value of 37 dB μ V/m in the reference frequency bandwidth of 5 MHz at the border line.

4. Operator arrangements

To further improve the compatibility of terrestrial systems capable of providing electronic communications services in border areas, operators may conclude additional arrangements such as:

- preferential frequency distribution arrangements,
- preferential code division arrangements (e.g. according to ERC/REC(01)01),

- frequency carrier definitions (e.g. according to ECC/REC/(11)05),
- synchronisation of concerned networks.

Such operator arrangements:

- shall only be valid as long as all participating operators hold exclusive rights for concerned frequencies,
- shall not impose disadvantages on other operators,
- should respect field strength levels and provisions given by relevant documents (e.g. ECC recommendations),
- are subject to prior consent of the administrations concerned.

5. Field strength prediction

For the field strength calculations the tool of the HCM Agreement shall be applied (calculation mode CMODE=-8). Time probability in all calculations is 10 %.

6. Revision of this Agreement

This Agreement may be modified at a request of any of the signatory administrations where such a modification becomes necessary in the light of administrative, regulatory or technical development. Modification of the Agreement shall be done by an amendment.

7. Withdrawal from the Agreement

Any administration may withdraw from the agreement by the end of a calendar month by giving notice of its intention at least six months before.

8. Language of the Agreement

This Agreement has been concluded in English language.

9. Date of entry into force

The date of entry into force is 22 June 2012.

10. Signature of the Agreement

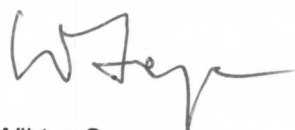
This Agreement exists in 2 equally authentic copies. The Polish administration makes notification in accordance with HCM Agreement to the managing administration.

On behalf of the Administration
of the Republic of Lithuania



Mindaugas Žilinskas

On behalf of the Administration
of the Republic of Poland



Wiktor Sęga

**Allocation² of preferential physical cell identifiers (PCI) in the border areas
to the Republic of Lithuania and the Republic of Poland**

Set A	Set B	Set C	Set D	Set E	Set F
0..83	84..167	168..251	252..335	336..419	420..503
LTU	LTU	LTU	POL	POL	POL

² This allocation is based on the Recommendation ECC/REC/(11)05 (Annex 5)