TECHNICAL ARRANGEMENT

between the Electronic Communications Office of the Republic of Latvia and the Communications Regulatory Authority of the Republic of Lithuania concerning the use of the frequency bands 880-915 MHz / 925-960 MHz for terrestrial systems in border areas

1 February 2018

Preamble

According to Article 6 of ITU Radio Regulations, representatives of the Electronic Communications Office of the Republic of Latvia and the Communications Regulatory Authority of the Republic of Lithuania (hereinafter referred to as the Parties) have concluded this Technical Arrangement concerning the use of the 880-915 MHz / 925-960 MHz frequency bands for terrestrial systems (hereinafter referred to as the Arrangement) with the aim of optimizing the use of the frequency bands and avoiding mutual interference on a mutually coordinated basis.

This Arrangement supersedes:

1) "Protocol of the meeting between the Representatives of Lithuania and Latvia on the coordination of frequencies for GSM" (Minsk, 11-15 December 1995);

2) «ПРИЛОЖЕНИЕ 4 Распределение предпочтительных радиоканалов системы GSM между Администрациями Беларуси, Латвии и Литвы» of «Протокол встречи между представителями Администраций Беларуси и Латвии по распределению радиоканалов в полосах 890-915 МГц и 935-960 МГц для сетей связи сухопутной службы стандарта GSM» (Минск, 14 декабря 1995 г.);

3) "Coordination principles and channel arrangement concerning the use of the preferential and non-preferential channels of E-GSM system in the border areas within the frequency bands 880-890 MHz / 925-935 MHz between the Electronic Communications Office of the Republic of Latvia and the Communications Regulatory Authority of the Republic of Lithuania" (Vilnius, 23rd September 2005);

4) "Arrangement between the Electronic Communications Office of the Republic of Latvia and the Communications Regulatory Authority of the Republic of Lithuania concerning the use of frequency bands 890-915 MHz / 935-960 MHz for the GSM system in border areas" (Minsk 13th October 2011);

5) bilateral and trilateral parts of the Parties of "Technical criteria and principles concerning the use of frequency bands 913.900-914.900 MHz / 958.900-959.900 MHz for the GSM system in border areas agreed by the State Supervisory Department for Telecommunications of the Ministry of Telecommunications and Informatization of the Republic of Belarus, the Electronic Communications Office of the Republic of Latvia and the Communications Regulatory Authority of the Republic of Lithuania" (Minsk 13th October 2011);

6) "Arrangement between the Electronic Communications Office of the Republic of Latvia and the Communications Regulatory Authority of the Republic of Lithuania concerning use of the frequency bands 880-915 MHz / 925-960 MHz for terrestrial systems in border areas" (Vilnius, 31st January 2013).

1. Principles

1.1. This Arrangement is based on the concept of coordination field strength levels for base stations, allocation of preferential and non-preferential GSM channels, allocation of preferential and non-preferential code sets for UMTS systems, allocation of preferential and non-preferential Physical Cell Identifiers[1] (PCI) for LTE systems. This is in conformity with the ECC Recommendation (05)08 of 3rd February 2017 "Frequency planning and cross-border coordination between GSM Land Mobile Systems

[1] Coordination of 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.

(GSM 900, GSM 1800, and GSM-R)" and the ECC Recommendation (08)02 of 27th April 2012 "Frequency planning and frequency coordination for GSM/UMTS/LTE/WiMAX Land Mobile systems operating within the 900 and 1800 MHz bands" (hereinafter referred to as ECC/REC/(08)02).

1.2. The FDD[2] frequency arrangement is presumed: mobile stations (user equipment or terminals) transmit and receive in the frequency bands 880-915 MHz / 925-960 MHz respectively, base stations transmit and receive in the frequency bands 925-960 MHz / 880-915 MHz respectively.

1.3. Allocation of preferential and non-preferential GSM channels between Parties is given in Annex 1 of this Arrangement.

1.4. Allocation of preferential and non-preferential code groups for UMTS systems between Parties is given in Annex 3 of this Arrangement.

1.5. Allocation of preferential and non-preferential Physical Cell Identifiers (PCI) for LTE systems between Parties is given in Annex 4 of this Arrangement.

1.6. The Parties agreed to use a channel plan for GSM based on a 200 kHz grid. Carrier frequencies (radio frequency channels) and channel numbers shall be derived according to ETSI standard EN 301 087[3].

1.7. This Arrangement covers coordination of base stations.

1.8. In the context of this Arrangement the term "border" is understood as the international borderline between the countries of the Parties.

2. Use of frequencies, codes and PCI

2.1. Each Party may use its preferential GSM channels without prior coordination with the other Party if the field strength level of each carrier produced by the base station does not exceed the value of 26 dBμV/m/200 kHz at a height of 10 m above ground at a distance of 30 km inside the territory of other Party.

2.2. Each Party may use its non-preferential GSM channels without prior coordination with the other Party if the field strength level of each carrier produced by the base station does not exceed the value of 26 dBμV/m/200 kHz at a height of 10 m above ground at the border.

2.3. Each Party may use the frequency bands 880-915 MHz / 925-960 MHz for wideband systems without coordination with the other Party if the predicted mean field strength level of each carrier produced by a base station does not exceed the field strength levels given in Annex 2 at a height of 3 m above ground at the border and at a distance of 9 km from the border inside the territory of other Party respectively.

2.4. For UMTS systems each Party shall use code sets according to the Annex 3 of this Arrangement.

2.5. For LTE systems each Party may use all PCI available if the predicted mean field strength level of each carrier produced by a base station does not exceed the value of

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[2] FDD – Frequency Division Duplex.

[3] "Digital cellular telecommunications system (Phase 2 & Phase 2+); Base Station System (BSS) equipment specification; Radio aspects".

35 dBμV/m/5MHz at a height of 3 m above ground at the border. If the predicted mean field strength level of each carrier produced by a base station exceeds the value of 35 dBμV/m/5MHz at a height of 3 m above ground at the border each Party shall use PCI according to the Annex 4 to this Arrangement.

2.6. If frequency block size is other than 5 MHz, a correction, calculated by the formula $10 \times \text{log}_{10}$(frequency block size / 5 MHz), dB, shall be added to the field strength values indicated in items 2.3 and 2.5.

2.7. Each Party shall notify the other Party concerning the beginning or cancellation of use of UMTS FDD and LTE FDD systems in frequency bands 880-915 MHz / 925-960 MHz located at a distance less than 30 km from border indicating the frequency bands or channels concerned.

3. Procedure

3.1. If the predicted mean field strength value of any carrier produced by the base station exceeds the levels indicated in item 2.1, 2.2 or 2.3 the frequency assignment shall be coordinated with the other Party.

3.2. The period of coordination shall not exceed 45 days from the date of receiving the request and 20 days after the reminder. If no reply is received within 65 days the frequency assignment shall be considered as coordinated. The exchange of coordination information shall take place by e-mail or other electronic means.

3.3. Coordination requests shall be drawn up according to Annex 4 of the ECC/REC/(08)02.

3.4. Complaints of harmful interference shall be based on the median value of measurements of field strength, performed at a receiving antenna height of 3 m for wideband systems and 10 m for GSM system above ground accordingly at least in two different points over a distance of at least 100 m along the border.

3.5. Reports of 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.

3.6. For field strength calculations, the Parties shall use the latest version of Recommendation ITU-R 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.

3.7. In case of harmful interference to GSM from other systems covered by this Arrangement the Parties shall consider reducing field strength levels produced by their systems compared to those permitted in Annex 2 of this Arrangement in order to eliminate the harmful interference.

4. Operators arrangement

4.1. Operators concerned may agree to deviate from field strength levels in items 2.1, 2.2 or 2.3 by mutual consent, concluding an arrangement between operators with the consent of the Parties concerned. Such operator arrangement shall only be valid as long as all participating operators hold exclusive rights of use of concerned frequencies.

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. Entry into force

6.1. This Arrangement shall come into force on 1 February 2018.

6.2. This Arrangement has been drawn in English in two identical copies, one for the Republic of Latvia and one for the Republic of Lithuania.

Signed by correspondence

On behalf of the Electronic Communications Office of the Republic of Latvia	On behalf of the Communications Regulatory Authority of the Republic of Lithuania
.....	.....
Māris Aleksandrovs	Mindaugas Žilinskas
Place: Riga	Place: Brussels
Date: 24.01.2018	Date: 30.01.2018

Annex 1

Allocation of preferential GSM channels
in the 880-915 MHz / 925-960 MHz frequency bands
between the Republic of Latvia and the Republic of Lithuania

975 LTU (9) 983	984 LVA (8) 991	992 LTU (8) 999	1000 LVA (12) 1011	1012 LTU (8) 1019	1020 LVA (5) 1024

1 LTU (24) 24	25 LVA (34) 58	59 LTU (8) 66	67 LVA (16) 82	83 LTU (17) 99	100 LVA (12) 111	112 LTU (13) 124

Summary:
LVA[4] - 87 channels
LTU[5] - 87 channels

[4] LVA – the Republic of Latvia
[5] LTU – the Republic of Lithuania

Annex 2

Coordination field strength levels for land mobile base stations in the 880-915 MHz / 925-960 MHz frequency bands between the Republic of Latvia and the Republic of Lithuania

	UMTS (channel bandwidth 5 MHz)				All other cases[6,7]	
	Centre frequencies aligned		Centre frequencies not aligned		Frequency block size, MHz	
Coordination field strength level, dBµV/m	**Preferential codes used**	**Non-preferential codes used**	**Preferential codes used**	**Non-preferential codes used**	**5**	**other than 5 MHz**
at the border	59	35	59	59	59	$59+10 \times \log_{10}$ (frequency block size / 5 MHz)
at a distance of 9 km inside the territory of other Party	35	-	35	35	35	$35+10 \times \log_{10}$ (frequency block size / 5 MHz)

[6] For the case GSM vs. UMTS/LTE the coordination field strength level for GSM shall be used according to items 2.1 and 2.2 of this Arrangement.

[7] The following cases refer to the Land Mobile systems and utilisation:

- LTE vs. LTE
- LTE vs. GSM
- LTE vs. UMTS
- UMTS vs. GSM

Annex 3

Allocation of preferential codes for UMTS (UTRA FDD) systems in the 880-915 MHz / 925-960 MHz frequency bands between the Republic of Latvia and the Republic of Lithuania

Code set	**A**	**B**	**C**	**D**	**E**	**F**
Code groups	0 to10	11 to 20	21 to 31	32 to 42	43 to 52	53 to 63
Set preferential to	LTU	LVA	LTU	LVA	LVA	LTU

Annex 4

Allocation of preferential Physical Cell Identifiers (PCI) for LTE systems in the 880-915 MHz / 925-960 MHz frequency bands between the Republic of Latvia and the Republic of Lithuania

Set	**A**	**B**	**C**	**D**	**E**	**F**
PCI	0 to 83	84 to 167	168 to 251	252 to 335	336 to 419	420 to 503
Set preferential to	LTU	LVA	LTU	LVA	LVA	LTU