

ARRANGEMENT

**between the Consumer Protection and Technical Regulatory
Authority of the Republic of Estonia and the Electronic
Communications Office of the Republic of Latvia on the use of
the frequency bands 450-457.5 MHz / 460-467.5 MHz by stations
in the land mobile service in border areas**

Riga, 24 April 2019

Preamble

According to Article 6 of the ITU Radio Regulations, representatives of the Consumer Protection and Technical Regulatory Authority of the Republic of Estonia and the Electronic Communications Office of the Republic of Latvia (hereinafter referred to as the Parties) have concluded the present Arrangement on the use of the 450-457.5 MHz / 460-467.5 MHz frequency bands by stations in the land mobile service using PMR¹, CDMA and LTE systems with the aim of optimizing the use of the frequency band and avoiding mutual interference in border areas on a mutually agreed basis (hereinafter referred to as the Arrangement).

This Arrangement cancels and replaces the „Arrangement between the Estonian Technical Surveillance Authority and the Electronic Communications Office of the Republic of Latvia on the use of the frequency bands 450.000-457.475 MHz/ 460.000-467.475 MHz by stations in the Land Mobile Service in border areas” (Tallinn, 18th December 2012).

1. Principles

1.1. This Arrangement is based on the concept of coordination threshold levels for base stations, allocation of preferential and non-preferential Pseudo-Noise (PN) codes for CDMA systems, allocation of preferential and non-preferential Physical Cell Identifiers (PCI) for LTE systems as described in Recommendation T/R 25-08 of 15 January 1990 “Planning criteria and cross-border coordination of frequencies for land mobile systems in the range 29.7-470 MHz” (amended 28 September 2018) (hereinafter referred to as the T/R 25-08), on the principle of equitable access to spectrum by Parties.

1.2. The channelling arrangement for PMR systems in the frequency bands 450-453 MHz / 460-463 MHz is derived from T/R 25-08.

1.3. The CDMA channel parameters are derived from the 3GPP Specification “C.S0010-A, Recommended Minimum Performance Standards for cdma2000 Spread Spectrum Base Stations”. The channel bandwidth is 1.25 MHz and preferable channel numbers are 60, 110, 160, 210 and 260. Central frequencies of CDMA channels are given in Annex 1 to this Arrangement.

1.4. The following frequency arrangement for LTE systems presumes: FDD² mobile stations (user equipment or terminals) transmit and receive respectively in the bands 452.5-457.5 MHz / 462.5.0-467.5 MHz, FDD base stations transmit and receive respectively in the bands 462.5.0-467.5 MHz / 452.5-457.5 MHz. The frequency arrangement conforms to ECC Decision (19)02 of 8 March 2019 “Land mobile systems in the frequency ranges 68-87.5 MHz, 146-174 MHz, 406.1-410 MHz, 410-430 MHz, 440- 450 MHz and 450-470 MHz”.

1.5. Allocation of preferential and non-preferential PN codes for CDMA systems between Parties is given in Annex 2 to this Arrangement.

1.6. Allocation of preferential and non-preferential PCIs for LTE systems between Parties is given in Annex 3 to this Arrangement.

1.7. The field strength values in this Arrangement are based on a receiving antenna height of 3 m above ground for 10% of time and 50% of locations, if not stated otherwise.

1.8. This Arrangement covers coordination of base stations.

1.9. In context of this Arrangement the term “border” is understood as the international border line between the countries of the Parties.

1.10. The Latvian frequency assignments of CDMA stations within the frequency band 450-457.475 MHz / 460-467.475 MHz whose coordination has been completed according to „Arrangement between the Estonian Technical Surveillance Authority and the Electronic

¹ Private mobile radio / private or professional mobile radio.

² FDD - Frequency Division Duplex.

Communications Office of the Republic of Latvia on the use of the frequency bands 450.000-457.475 MHz/ 460.000-467.475 MHz by stations in the Land Mobile Service in border areas” (Tallinn, 18th December 2012) shall keep their status after coming into force of this Arrangement.

2. Use of frequencies

2.1. Latvia may use CDMA channels 60 and 110 without coordination with the Estonia if the field strength value produced by the base station carrier does not exceed 37 dB μ V/m/1.25 MHz at a height of 10 m (or 26.7 dB μ V/m/1.25 MHz at a height of 3 m)³ above ground at the border.

2.2. Estonia may use PMR channels in the frequency bands 450-453 MHz / 460-463 MHz without mutual coordination if the field strength value produced by the base station carrier does not exceed 20 dB μ V/m/25 kHz at a height of 10 m (or 9.7 dB μ V/m/25 kHz at a height of 3 m) above ground at the border.

2.3. Each Party may use the 452.5-457.5 MHz/ 462.5-467.5 MHz frequency bands for CDMA or LTE stations respectively using its preferential PN codes or PCIs without coordination with other Party if the mean field strength produced by the base station cell does not exceed the value of 55 dB μ V/m/5 MHz at the border and does not exceed a value of 37 dB μ V/m/5 MHz at a distance of 10 km from the border inside the neighbouring country.

2.4. For CDMA or LTE systems each Party respectively may use all PN codes or PCIs available if the predicted mean field strength produced by the base station cell does not exceed the value of 37 dB μ V/m/ 5 MHz at the border. If the predicted mean field strength produced by the base station cell of CDMA or LTE systems exceeds the value of 37 dB μ V/m/ 5 MHz at the border each Party respectively shall use only their own preferential PN codes or PCIs according to the Annex 2 and Annex 3 to this Arrangement.

2.5. If frequency block size is other than 5 MHz, correction calculated by equation $10 \times \log_{10}(\text{channel bandwidth} / 5 \text{ MHz})$, dB, shall be added to the field strength values indicated in items 2.3, 2.4.

3. Procedure

3.1. If the predicted field strength value produced by the base station exceeds respectively levels indicated in items 2.1, 2.2, 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 the receipt of 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 filled in the appropriate ITU electronic format.

3.4. Complaints of harmful interference shall be based on the median value of measurements of field strength, performed at the receiving antenna height of 3 m 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 and processed according to Article 15 of the ITU Radio Regulations. The Parties shall take all possible measures in order to eliminate harmful interference.

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".

³ According to the correction for receiving/mobile antenna height given in Annex 5, § 9 of the Recommendation ITU-R P.1546 "Method for point-to-area predictions for terrestrial services in the frequency range 30 MHz to 3000 MHz".

4. Operators arrangement

4.1. Operators concerned may agree to deviate from field strength levels in item 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 other Party on its intention at least six months before.

6. Entry into force

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

6.2. This Arrangement has been drawn in two identical copies, one for Latvia and one for Estonia.

Riga, 24 April 2019.

For the Consumer Protection and
Technical Regulatory Authority of
the Republic of Estonia

For the Electronic Communications
Office of the Republic of Latvia

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Arvo Rammus

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Māris Aleksandrovs

**Central frequencies of preferable channels according to the 3GPP Specification
“C.S0010-A, Recommended Minimum Performance Standards for cdma2000 Spread
Spectrum Base Stations” and allocation of CDMA channels between Latvia and
Estonia**

	CDMA channel numbers				
	60	110	160	210	260
Uplink, MHz	451.475	452.725	453.975	455.225	456.475
Downlink, MHz	461.475	462.725	463.975	465.225	466.475

Allocation of preferential Pseudo-Noise (PN) codes for CDMA systems between Latvia and Estonia⁴

Set	A	B	C	D	E	F
Code indices	2 to 83	88 to 168	173 to 253	258 to 338	343 to 423	428 to 509
Set preferential to	LVA ⁵	LVA	EST ⁶	EST	LVA	EST

⁴ According to Annex 5 of T/R 25-08.

⁵ LVA – the Republic of Latvia.

⁶ EST – the Republic of Estonia.

Allocation of preferential Physical Cell Identifiers (PCI) for LTE systems in the 452.5-457.5 MHz/ 462.5-467.5 MHz frequency band between Latvia and Estonia⁷

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	LVA	LVA	EST	EST	LVA	EST

⁷ According to Annex 5 of T/R 25-08.