

**ARRANGEMENT**

**between  
the Electronic Communications Office of the Republic of Latvia  
and the Administration of the Russian Federation  
concerning the use of the frequency bands  
876-880 MHz / 921-925 MHz  
for GSM-R systems in border areas**

**Riga, 2013**

## Preamble

According to Article 6 of the ITU Radio Regulations, representatives of the Electronic Communications Office of the Republic of Latvia and the Administration of the Russian Federation (hereinafter referred to as the Parties) have concluded this Arrangement concerning the use of the 876-880 MHz / 921-925 MHz frequency bands for GSM-R systems in border<sup>1</sup> areas (hereinafter referred to as the Arrangement) with the aim of optimizing the use of the frequency bands for railway purposes and avoiding mutual interference on a mutually coordinated basis.

## 1. Principles

- 1.1. This Arrangement is based on the concept of coordination threshold levels for base stations and preferential / non-preferential radio channels for GSM-R systems as described in ECC Recommendation (05)08 (edition 1 February 2006) "Frequency planning and frequency coordination for the GSM 900, GSM 1800, E-GSM and GSM-R land mobile systems (Except direct mode operation (DMO) channels)" (hereinafter referred to as ECC/REC(05)08) and on the principle of equal access to spectrum by both Parties.
- 1.2. The following frequency arrangement for GSM-R systems presumes: FDD<sup>2</sup> mobile stations transmit and receive respectively in the bands 876-880 MHz / 921-925 MHz, FDD base stations transmit and receive respectively in the bands 921-925 MHz / 876-880 MHz. This conforms to ECC Decision (02)05 of 5<sup>th</sup> July 2002 (amended in 8<sup>th</sup> March 2013) "The designation and availability of frequency bands for railway purposes in the 876-880 MHz and 921-925 MHz bands".
- 1.3. Allocation by preferential and non-preferential channels for GSM-R systems between Parties is given in Annex of the Arrangement.
- 1.4. The Parties agree that centre frequencies and numbers of duplex channels for GSM-R systems are determined in accordance with ETSI<sup>3</sup> standard EN 301 087 "Digital cellular telecommunications system (Phase 2 & Phase 2+); Base Station System (BSS) equipment specification; Radio aspects" (hereinafter referred to as EN 301 087). The channel spacing is 200 kHz.
- 1.5. This Arrangement covers coordination of base stations.

## 2. Use of frequencies

- 2.1. Each Party may use its preferential channels without coordination with the other Party if the predicted mean field strength of each carrier produced by the base station does not exceed the value of 19 dBµV/m/200kHz at a distance of 15 km from the border inside the neighbouring country.
- 2.2. Each Party may use the preferential channels of the other Party without coordination with the other Party if the predicted mean field strength of each carrier produced by the base station does not exceed the value of 19 dBµV/m/200kHz at the border.
- 2.3. Each Party may use the frequencies 876.2 MHz / 921.2 MHz (channel No 955) without coordination with the other Party if the predicted mean field strength of each carrier produced by the base station does not exceed the value of 19 dBµV/m/200kHz at the border.

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<sup>1</sup> In the context of this Arrangement the term "border" is understood as the international borderline between the countries of the Parties

<sup>2</sup> FDD - Frequency Division Duplex

<sup>3</sup> ETSI - the European Telecommunications Standards Institute

- 2.4. The field strength values in this Arrangement are defined for a receiving antenna height of 3 m above ground for 10% of time and 50% of locations.

### **3. Procedure**

- 3.1. If the predicted mean field strength value of each carrier produced by the base station exceeds the levels indicated in items 2.1, 2.2 and 2.3 the frequency assignment shall be coordinated with the other Party.
- 3.2. The period of coordination shall not exceed 65 days from the date of receiving the request and 20 days after the reminder. If no reply is received within 85 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 the provisions of ECC/REC(05)08 in the appropriate ITU electronic formats.
- 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 above ground 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".

### **4. Revision and cancellation**

- 4.1. This Arrangement may be revised at any time on the initiative of any Party with the consent of the other Party.
- 4.2. 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.

### **5. Entry into force**

- 5.1. This Arrangement shall come into force on the date of signing it by both Parties.
- 5.2. This Arrangement has been drawn up in two identical copies, one for the Republic of Latvia and one for the Russian Federation.

Riga, 17 May 2013

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

On behalf of the Administration of  
the Russian Federation



**Allocation of preferential channels  
in the 876-880 MHz / 921-925 MHz frequency bands  
between the Republic of Latvia and the Russian Federation**

No.	Channel number <sup>4</sup>	Transmitting centre frequency of mobile station, MHz	Transmitting centre frequency of base station, MHz	Preferential channel allocated to
1.	955	876.200	921.200	C <sup>5</sup>
2.	956	876.400	921.400	LVA
3.	957	876.600	921.600	LVA
4.	958	876.800	921.800	LVA
5.	959	877.000	922.000	LVA
6.	960	877.200	922.200	LVA
7.	961	877.400	922.400	LVA
8.	962	877.600	922.600	LVA
9.	963	877.800	922.800	LVA
10.	964	878.000	923.000	LVA
11.	965	878.200	923.200	RUS
12.	966	878.400	923.400	RUS
13.	967	878.600	923.600	RUS
14.	968	878.800	923.800	RUS
15.	969	879.000	924.000	RUS
16.	970	879.200	924.200	RUS
17.	971	879.400	924.400	RUS
18.	972	879.600	924.600	RUS
19.	973	879.800	924.800	RUS

Summary:

RUS<sup>6</sup> - 9 channels

LVA<sup>7</sup> - 9 channels

<sup>4</sup> According to EN 301 087

<sup>5</sup> Shared channel

<sup>6</sup> RUS - the Russian Federation

<sup>7</sup> LVA - the Republic of Latvia