AGREEMENT

between the administrations of

Belgium, France, Germany, Luxembourg, the Netherlands and Switzerland

on frequency usage and coordination in border areas for Railway Mobile Radio (RMR) systems in the 1900-1910 MHz frequency band

by Correspondence, May 2026

1 Introduction

The frequency band 1900-1910 MHz is designated for Railway Mobile Radio (RMR) systems

- for Belgium, France, Germany, Luxembourg and The Netherlands according to latest version of the Commission implementing Decision (EU) 2021/1730 of 28 September 2021 on the harmonised use of the paired frequency bands 874.4-880.0 MHz and 919.4-925.0 MHz and of the unpaired frequency band 1900-1910 MHz for Railway Mobile Radio.

- for Switzerland according to the national frequency allocation plan as approved by the Federal Council.

The administrations of Belgium, France, Germany, Luxembourg, the Netherlands and Switzerland have agreed on the following frequency usage and cross-border frequency coordination procedures.

2 Principles of frequency usage and frequency coordination in border areas

The concept of equal access probability is a frequency planning principle enabling 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.

In addition to that, due to the inherent characteristics of TDD operation with simultaneous UL/DL in different networks, a synchronization framework (see 2.1) has been identified in order to allow equitable access and base stations coverage in border area. The application of the synchronization framework is triggered by the conditions the section 3.1 of the agreement.

Furthermore this agreement is based on the principles of frequency usage and frequency coordination according to Recommendation ECC/REC(23)01 (see docdb.cept.org).

The field strength values refer to the field strength of each cell produced by the base station and are defined inside a reference frequency block of 5 MHz

In cases of other frequency block sizes 10 x $\log_{10}$ (frequency block size / 5 MHz) should be added to the field strength values.

2.1 Synchronization framework

In absence of an RMR operator's arrangement the following fall-back synchronisation parameters for the deployment, as identified in Annex 5 of ECC/REC(23)01, should apply:

Table 1: Reference TDD parameters for synchronised co-channel operation at a border

Parameter	Value
Reference phase / time clock	Aligned with UTC, properly monitored to ensure the local clock drift does not exceed +/- 1.5 µs in the event of a PRTC outage (Informative note: GNSS (e.g. GPS) is an example of compliant PRTC)
Reference frame	With Tc := 1/(480000*4096) seconds (Basic time unit for NR as defined in ETSI TS 138.211, section 4.1): 1. Start-of-frame, aligned with the reference clock 2. Downlink for 3371008*Tc 3. Guard period for 280576*Tc 4. Uplink for 2246656*Tc 5. Downlink for 1685504*Tc 6. Guard period for 280576*Tc 7. Uplink for 1966080*Tc 8. Downlink for 3371008*Tc 9. Guard period for 280576*Tc 10. Uplink for 2246656*Tc 11. Downlink for 1685504*Tc 12. Guard period for 280576*Tc 13. Uplink for 1966080*Tc 14. Back to start-of-frame (Informative note: Those timings correspond to 5G-NR configuration "DS_aUS_bU DS_aUS_bU" with a 15 kHz SCS and S(DL/GP/UL):=(S_a = 10:2:2, S_b = 12:2:0) and 5G NR configuration "$DDDS_1UUDS_2UU$ $DDDS_1UUDS_2UU$" with a 30 kHz SCS and S(DL/GP/UL):=(S_1 = 6:4:4, S_2 = 10:4:0)) Note: All SCS are acceptable as long as the frame complies with the above timings. Other frame configurations are also deemed compatible if they do not lead to any downlink/uplink overlap (e.g. if they implement a larger guard period).

2.1.1 Downlink Symbol Blanking (DSB)

The downlink symbol blanking (DSB) feature can be used to facilitate cross-border coordination between RMR operators who decide to use two non-compatible frame structures while adopting a common phase clock reference.

In the railway context the usage of the DSB feature is possible to the extent described in ECC Report 353.

DSB implementation will be defined between RMR operators according to specific RMR arrangement (for more details, see section 4).

3 Technical provisions

3.1 Synchronised operation

Synchronised operation is defined by application of a common reference clock (as specified in section 2.1 and a compatible frame structure.

RMR base stations may be operated without coordination with the neighbouring country if the field strength of each cell produced by the base station does not exceed:

a) In case of synchronisation signal centre frequencies not aligned for all Physical-Layer Cell Identities[1] (PCIs) or with synchronisation signal centre frequencies aligned and for preferential PCI usage:

65 dBµV/m/5 MHz at a height of 3 m above the ground at the border line, and
47 dBµV/m/5 MHz at a height of 3 m above the ground in a distance of 6 km beyond the border line

b) In case of synchronisation signal centre frequencies aligned for non-preferential PCI usage:

47 dBµV/m/5 MHz at a height of 3 m above the ground at the border line

In the case of channel bandwidth other than 5 MHz, a factor of $10 \times \log_{10}$ (channel bandwidth / 5 MHz), should be added to the field strength levels.

3.2 Unsynchronised operation

Unsynchronised operation is defined by absence of a common reference clock or/and application of non-compatible frames in border areas.

RMR base stations may be operated for all PCIs without coordination with the neighbouring country if the produced field strength does not exceed

0 dBµV/m/5 MHz at a height of 3 m above the ground at the border line.

In the case of channel bandwidth other than 5 MHz, a factor of $10 \times \log_{10}$ (channel bandwidth / 5 MHz), should be added to the field strength levels.

3.3 PCI coordination

In order to improve performance between LTE or NR deployed in border areas the administration shall encourage operators to apply PCI coordination or equivalent parameters and arrange other radio parameters in accordance with the relevant annexes of ECC/REC(23)01 especially in the case where synchronisation signal centre frequencies of LTE/NR signals in border areas are aligned.

4 Operators arrangements

The conclusion of arrangements between RMR operators shall be allowed to the extent possible, according to the provisions laid down in the "Agreement between the administrations of Belgium, France, Germany, Luxembourg, The Netherlands and Switzerland concerning the approval of arrangements between operators of terrestrial systems capable of providing electronic communications services" done at Brussels on 11th October 2011.

[1] as defined in ECC/REC(23)01

Operators' arrangements could contain provisions for the cross-border synchronisation.

If operators' arrangements are concluded for a specific issue before or after entry in force of this agreement, and approved by the concerning administrations, they stay/become in force to replace the administration agreement. The administration agreement become/will stay in force between administrations.

5 Prediction of propagation

For field strength calculations the tool of the latest version of the HCM-Agreement shall be applied. Time probability for all calculations is 10 %.

6 Revision of the 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.

7 Withdrawal from the agreement

Any signatory administration may withdraw from this agreement subject to six months' notice.

8 Language of the agreement

This agreement has been concluded in English language.

One original version of this agreement is handed over to each signatory administration.

9 Date of entry into force

The date of entry into force of this agreement is subject to individual signature of this agreement.

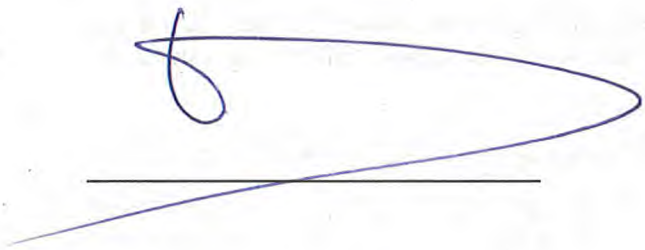
The application of this agreement is valid between the administrations which both have signed the agreement.

Administrations may need to conclude bilateral agreements, additional or transitional, to ensure the compatibility between mobile and other radiocommunication services.

10 Signature of the agreement

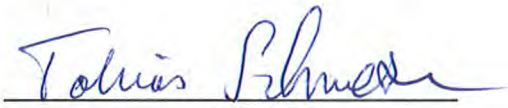
Done by correspondence.

For BELGIUM
Date: 04.06.2026
Belgian Institute for Postal services and Telecommunications
On behalf of the BIPT Council
Michael Vandroogenbroek

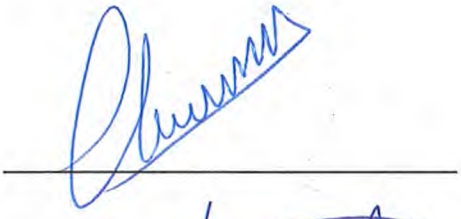


For FRANCE
Date: 5.05.2026
Agence Nationale des Fréquences
Keite DYVRANDE

For GERMANY
Date: 05.05.2026
Federal Network Agency
Tobias Schnetzer



For LUXEMBOURG
Date: 26.05.2026
For the Institut Luxembourgeois de Régulation
Claude Rischette



For THE NETHERLANDS
Date: 06-07-2026
Authority for Digital Infrastructure
Kier-co Gerritsen

For SWITZERLAND
Date: 12-05-2026
Federal Office of Communications
Konrad Vonlanthen