

## **TECHNICAL AGREEMENT**

**between the telecommunications administrations  
of the Federal Republic of Germany and the Republic of Poland**

**concerning the use of the frequency band 1920-1980 / 2110-2170 MHz  
for terrestrial Mobile/Fixed Communications Networks (MFCN) in  
border areas**

## Preamble

According to Article 6 of the ITU Radio Regulations and in the framework of the “HCM Agreement”, representatives of the telecommunications administrations of the Federal Republic of Germany and the Republic of Poland (hereinafter referred to as the Parties) have concluded this Technical Agreement concerning the use of the 1920-1980 / 2110-2170 MHz frequency bands for terrestrial mobile/fixed communications networks (MFCN)<sup>1</sup> in border<sup>2</sup> areas (hereinafter referred to as the Technical Agreement) with the aim of optimizing the use of this frequency band and avoiding mutual interference on a mutually coordinated basis.

## 1. Principles

- 1.1. This Agreement is based on the concept of coordination field strength levels for base stations, distribution of preferential and non-preferential codes for UMTS system, distribution of preferential and non-preferential Physical-layer Cell Identities (PCI) for LTE and 5G/NR system. This is in utmost possible convergence with the latest version of the ERC Recommendation (01)01 “Cross-border coordination for mobile/fixed communications networks (MFCN) in the frequency bands: 1920-1980 MHz and 2110-2170 MHz”.
- 1.2. The following frequency arrangement is presumed: FDD mobile stations (user equipment or terminals) transmit and receive in the frequency bands 1920-1980 MHz and 2110-2170 MHz respectively, FDD base stations transmit and receive in the frequency bands 2110-2170 MHz and 1920-1980 MHz respectively.
- 1.3. This Agreement covers coordination of base stations only. Parties agree that coordination is not required for terminal stations since that is covered by coordination of base stations.
- 1.4. This Arrangement cancels and replaces the “Agreement between the Administrations of the Czech Republic, Germany, Poland and the Slovak Republic on border co-ordination of UMTS/IMT-2000 systems in the frequency bands 1900-1980 MHz, 2010-2025 MHz and 2110-2170 MHz, (Mainz, 25<sup>th</sup> of May 2002)” with regard to the bilateral case between the Republic of Poland and the Federal Republic of Germany, except the provisions concerning the 1900-1920 MHz and 2010-2025 MHz frequency bands. Frequency assignments made on the basis of abovementioned Agreement remain valid.

## 2. Use of frequencies

- 2.1. Field strength values in this Agreement are based on a receiving antenna height of 3 m above ground for 10 % of time and 50 % of locations.
- 2.2. Each Party may use the frequency bands 1920-1980 / 2110-2170 MHz without coordination with the other Party if the predicted mean field strength of each carrier produced by a base station at the border and at a distance of 6 km from the border inside the neighbouring country does not exceed the threshold field strength levels given in Annex 1.

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<sup>1</sup> Mobile/fixed communications networks (MFCN) includes IMT and other communications networks in the mobile and fixed services.

<sup>2</sup> In the context of this Technical Agreement the term “border” is understood as the international borderline between the countries of the Parties. In the Baltic Sea the borderline is the division line of the Exclusive Economic Zone (EEZ).

- 2.3. For UMTS systems in border areas each Party shall use code sets according to the Annex 2 to this Agreement.
- 2.4. For LTE systems in border areas each Party shall use PCI's sets according to the Annex 3 to this Agreement.
- 2.5. For NR systems in border areas each Party shall use PCI's sets according to the Annex 4 to this Agreement.
- 2.6. If frequency block size is wider than 5 MHz, a correction factor, calculated by the formula  $10 \times \log_{10}(\text{frequency block size} / 5 \text{ MHz})$ , dB, shall be added to the field strength values indicated in item 2.2.

### 3. General

- 3.1. If the predicted mean field strength value of any cell produced by the base station exceeds the levels indicated in item 2.2 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 2 of the HCM Agreement in the electronic format for mobile service.
- 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. Any harmful interference which is observed shall be reported to the Administration of the country in which the interfering station is located, in accordance with Annex 7 of the HCM Agreement. The Parties shall take all possible measures in order to eliminate harmful interference.
- 3.6. For the field strength calculations the official version of HCM Program for the Mobile Service based on ITU-R Recommendation P.1546 shall be applied (using appropriate calculation mode). The Parties may apply other calculation tools. In case of any differences in results of calculations the official version of HCM Program shall be used as a reference.

### 4. Operator arrangements

- 4.1. 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,
  - frequency carrier definitions,
  - synchronisation of concerned networks.
- 4.2. 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.

4.3. Further provisions are contained in the "Agreement between the administrations of the Czech Republic, Germany, Poland and the Slovak Republic concerning the approval of arrangements between operators of mobile radiocommunication networks (Mainz 29.5.2002)".

## 5. Revision and cancellation

5.1. This Document may be revised at any time on the initiative of any Party with the consent of the other Party.

5.2. This Document 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. This does not affect the operation of stations already brought into use or coordinated under this Document. After such cancellation, Parties will exchange the list of stations already brought into use or coordinated under this Document.

## 6. Entry into force

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

6.2. This Document has been drawn in English in two identical copies, one for the Federal Republic of Germany and one for the Republic of Poland.

Done by correspondence

On behalf of the telecommunications  
administration of the Federal Republic of  
Germany

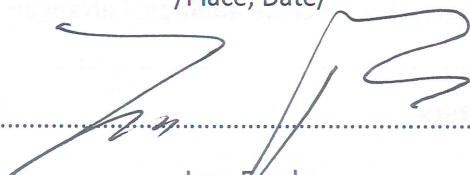
On behalf of the telecommunications  
administration of the Republic of Poland

Mainz, 18.11.2020

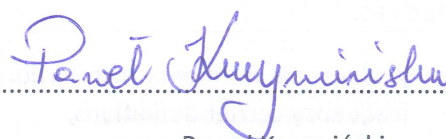
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Jens Franke



Paweł Krzyminiński

## Annex 1

### Threshold field strength levels for MFCN base stations

#### MFCN FDD vs MFCN FDD case (channel bandwidth – 5 MHz)

	Predicted mean field strength level, dBμV/m		
	Centre frequencies aligned		Centre frequencies not aligned
	Preferential codes/ PCI's used	Non-preferential codes/ PCI's used	
At the border	65	37	65
At a distance of 6 km inside the territory of the other Party	37	not applicable	37

Note: MFCN FDD systems include: UMTS, LTE, LTE-MTC (LTE Machine Type Communication), LTE-eMTC (evolved MTC), LTE inband NB-IoT, LTE guard-band (GB) NB-IoT and NR (New Radio)

## Annex 2

### Distribution of preferential codes for UMTS (UTRA FDD) system

Set	A	B	C	D	E	F
Code set	0 to 10	11 to 20	21 to 31	32 to 42	43 to 52	53 to 63
Set preferential to	POL <sup>3</sup>	D <sup>4</sup>	D	D	POL	POL

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<sup>3</sup> POL – Republic of Poland

<sup>4</sup> D – Federal Republic of Germany

## Annex 3

### Distribution of preferential Physical-layer Cell Identities (PCI) for LTE system

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

## Annex 4

### Distribution of preferential Physical-layer Cell Identities (PCI) for NR system

Set	A	B	C	D	E	F
PCI	0..83 504..587	84..167 588.671	168..251 672..755	252..335 756..839	336..419 840..922	420..503 923..1007
Set preferential to	POL	D	D	D	POL	POL