

AGREEMENT

between the administrations of

Poland and Germany

**on frequency planning and frequency usage at
border areas for terrestrial systems capable of
providing electronic communications services in the
frequency band 2 500 - 2 690 MHz**

(Warszawa, 3rd December 2010)

1. INTRODUCTION

The frequency band 2 500 - 2 690 MHz is designated for terrestrial systems capable of providing electronic communications services according to

COMMISSION DECISION (2008/477/EC) of 13th June 2008 on the harmonisation of the 2 500 - 2 690 MHz frequency band for terrestrial systems capable of providing electronic communications services in the Community (notified under document number C(2008) 2625)

Even if the ECC has not yet developed a border coordination recommendation for such services an Agreement on frequency planning for this band is deemed to be necessary since the frequency band 2 500 - 2 690 MHz is on the way to be auctioned and assigned.

This Agreement is based on the concept of equal access probability. The principles of this new frequency planning method 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 further coordination have been proposed by the TWG HCM MS to the ECC PT1 and are still in discussion there. This agreement is based on the respective TWG HCM MS proposal.

The administrations of Poland and Germany have agreed on the following frequency planning and frequency using procedures.

2. PRINCIPLES OF FREQUENCY PLANNING AND FREQUENCY USAGE AT BORDER AREAS

The concept of equal access probability is a new 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.

The following principles apply to frequency utilisation by terrestrial systems capable of providing electronic communications services in geographically adjacent areas in cases where concerned administrations agree to use the concept of equal access probability:

- Field strength values are defined inside a reference frequency block of 5 MHz.
- The field strength calculations shall take into account the sum of all signals radiated from the respective antenna sector within the reference frequency block. The respective field strength values for each signal should be applied by each antenna sector and can be deduced by reducing the limit proportionally to the frequency block portions falling into the reference bandwidth (reduction factor = $10 \times \log(\text{frequency block portion} / 5 \text{ MHz})$).

In order to assure equitable coverage and equal access probability to the spectrum in border areas even with different transmission technologies, and to enhance the efficiency of spectrum usage, the principles and field strength limits as given in chapter 5. of this agreement shall be respected by all networks concerned.

3. OPERATOR ARRANGEMENTS

To further improve the compatibility of terrestrial systems capable of providing electronic

communications services in border areas, operator arrangements may be concluded concerning other frequency coordination methods such as:

- preferential frequency distribution arrangements,
- (if concerned neighbouring systems in all affected countries are using code division multiple access technologies such as IMT-2000/UMTS) preferential code division arrangements (e.g. according to ERC/REC(01)01),
- frequency carrier definitions (e.g. with LTE),
- synchronisation of concerned networks.

Such arrangements are subject to consent of the administrations concerned. In particular, before giving consent to such arrangements, the administrations concerned should take care that all network operators concerned are parties in such an arrangement.

4. PROTECTION OF OTHER SERVICES AND SYSTEMS

Protection is not covered with this agreement.

5. TECHNICAL CHARACTERISTICS

The following values shall be applied to achieve equal access probability, and equitable coverage respectively.

The frequency band 2 500 MHz – 2 690 MHz is divided in three parts:

- a) 2 500 – 2 570 MHz,
- b) 2 570 – 2 620 MHz,
- c) 2 620 – 2 690 MHz.

The bands a) and c) are paired bands and may be used primarily for FDD systems.

The duplex spacing for FDD operation shall be 120 MHz with terminal station transmission (up link) located in band a) starting at 2 500 MHz (extending to a maximum limit of 2 570 MHz) and base station transmission (down link) located in band c) starting at 2 620 MHz (extending to a maximum limit of 2 690 MHz).

Under certain conditions, bands a) and c) are also available for operation of time division duplex (TDD) systems.

The band b) can be used by TDD systems or other usage modes complying with the applicable Block Edge Masks (BEM) given in Commission Decision (2008/477/EC) of 13th June 2008.

5.1 Frequency utilisation in cases where only FDD systems are used in bands a) and c)

Base stations of FDD systems may be operated if the produced field strength at a height of 3 m above ground does not exceed the value of 65 dB μ V/m in the reference bandwidth of 5 MHz at the border line, and does not exceed the value of 39 dB μ V/m in the reference bandwidth of 5 MHz at a line of 5 km beyond the border.

5.2 Frequency utilisation in band b)

Base stations of TDD systems may be operated if the produced field strength at a height of

3 m above ground does not exceed the value of 65 dB μ V/m in the reference bandwidth of 5 MHz at the border line, and does not exceed the value of 39 dB μ V/m in the reference bandwidth of 5 MHz at a line of 5 km beyond the border. Interference-free operation with these limits is only possible for synchronised networks.

5.3 Frequency utilisation in cases where TDD systems operate in the paired bands a) and c)

5.3.1 Frequency utilisation in cases where stations of TDD systems operate in the FDD downlink band c)

Base stations of such TDD systems may be operated if the produced field strength at a height of 3 m above ground does not exceed the value of 65 dB μ V/m in the reference bandwidth of 5 MHz at the border line, and does not exceed the value of 39 dB μ V/m in the reference bandwidth of 5 MHz at a line of 5 km beyond the border.

5.3.2 Frequency utilisation in cases where stations of TDD systems operate in the FDD uplink band a)

Base stations of such TDD systems may be operated if the produced field strength at a height of 10 m above ground at and beyond the border line does not exceed the value of 39 dB μ V/m in the reference bandwidth of 5 MHz.

6. PREDICTION OF PROPAGATION

For the field strength calculations the tool of the HCM Agreement shall be applied. Time probability in all calculations is 10 %.

7. FREQUENCY USAGE IN COASTAL AREAS

Technical characteristics presented in point 5 shall be applied for frequency usage in coastal areas.

8. REVISION OF THE AGREEMENT

This agreement may be modified at the request of one of the signatory administrations where such a modification becomes necessary in the light of administrative, regulatory or technical development.

If ECC publishes a coordination recommendation for WAPECS, the consequences of such a recommendation for this agreement shall be discussed among the signatories to this agreement.

The technical characteristics may be reviewed in the light of practical experience of its application and of the operation of terrestrial systems capable of providing electronic communications services in general.

9. WITHDRAWAL FROM THE AGREEMENT

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

10. LANGUAGE OF THE AGREEMENT

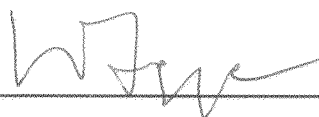
This agreement has been concluded in English.

11. DATE OF ENTRY INTO FORCE

The date of entry into force is the date of signature.


12. SIGNATURE OF THE AGREEMENT

Poland



Wiktor Seга

Germany



Elmar Zilles