

**TECHNICAL AGREEMENT
ON CROSS-BORDER FREQUENCY
HARMONIZATION**

BETWEEN

**AGENCY FOR ELECTRONIC COMMUNICATIONS
OF THE REPUBLIC OF MACEDONIA**

AND

**REGULATORY AUTHORITY OF ELECTRONIC AND POSTAL
COMMUNICATIONS
OF THE REPUBLIC OF KOSOVO**

ON

**FREQUENCY PLANNING AND FREQUENCY
COORDINATION
IN BORDER AREAS FOR**

GSM/UMTS 900 AND 1800 TECHNOLOGIES

for the frequency bands

**880 - 915/925 - 960 MHz, 1710 - 1785/1805 - 1880 MHz,
1900 - 1980 MHz, 2010 - 2025 MHz and 2110 - 2170 MHz**

May, 2013

 **Republika e Kosovës**
Republic of Kosovo · Republika Kosova
Autoriteti Rregullator i Telekomunikacionit
Telecommunications Regulatory Authority
Regulativni Autoritet Telekomunikacije

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PRISHTINË - PRISTINA - PRIŠTINA

РЕПУБЛИКА МАКЕДОНИЈА
АГЕНЦИЈА ЗА ЕЛЕКТРОНСКИ КОМУНИКАЦИИ
СКОПЈЕ

Број 1005-1422/3

22.05.2013 ГОДИНА

In reference to our outstanding cooperation which has gained an impetus with the signing of the Memorandum of Understanding (MoU), between heads of two authorities, the Agency for Electronic Communication of the Republic of Macedonia (AEC) and Telecommunication Regulatory Authority of Republic of Kosova (TRA), the former legal predecessor of the Regulatory Authority for Electronic and Postal Communications (RAEPC), dated; 21/01/2010, with the aim to further strengthen the practical cooperation on issues related to electronic communication services, conclude this technical agreement (*hereinafter 'Agreement'*).

1. Introduction

Regulatory Authority for Electronic and Postal Communications of the Republic of Kosovo and Agency for Electronic Communications of the Republic of Macedonia (*hereinafter called Signatory Authorities*) **have agreed on the harmonization of radio-frequencies on cross-border area for the usage of the frequencies of GSM, UMTS networks** in the bands 880 - 915/925 - 960 MHz, 1710 - 1785/1805 - 1880 MHz, 1900 - 1980, 2010 - 2025 MHz and 2110 - 2170 MHz.

In line with ECC Decision ECC/DEC(06)13 the frequency bands 880 - 915/925 - 960 MHz and 1710 - 1785/1805 - 1880 MHz are designated for terrestrial IMT-2000/UMTS systems, subject to market demand and national licensing/authorization schemes. Nevertheless, the administrations shall take all necessary measures to ensure the protection of continuing GSM operations in these bands.

The aim of this harmonization is to lay down the principles, the technical provisions and administrative procedure necessary to regulate the common deployment of the GSM, UMTS networks in GSM/UMTS 900 MHz, GSM/UMTS 1800 MHz and UMTS 2100 MHz bands in the border areas.

The Signatory Authorities have agreed on the following coordination procedures in border areas.

2. Principles

Frequency coordination at border areas is necessary to ensure efficiency spectrum use and equal access to spectrum in the border areas. This agreement is based on the principals of frequency planning and frequency coordination as laid down in ECC recommendations: ECC/REC (05)08, ECC/REC (08)02 and ECC/REC (01)01.

The following principles apply;

- 2.1. Stations using the GSM and UMTS technology will be coordinated according to ECC/REC (05)08, ECC/REC (08)02¹ and ECC/REC (01)01².

¹ ECC/REC(08)02 - edition of 27th April 2012

² ECC/REC(01)01 - edition 060207

- 2.2. Stations using GSM and UMTS technology may be used without coordination if the mean field strengths produced by the base stations do not exceed the values specified in Annex 1 of this agreement, in compliance with ECC recommendations specified in 2.1.
- 2.3. Preferential frequencies/preferential code groups shall not be used by the operators of both countries for stations using GSM or UMTS technology in any of the frequency bands treated in this document. Cross-border frequency coordination shall be based only on non-preferential frequencies/code groups.
- 2.4. Operators of both countries shall not direct antennas toward the neighboring country for the sole purpose of achieving coverage in the neighboring country.
- 2.5. Technical details of cross-border coordination are described in the Annexes of this Agreement.

3. Information exchange

- 3.1. The Parties, signatories to the Agreement, will initially exchange the lists of the GSM and UMTS base stations installed in the coordination area and on the explicit request of a signatory Party of this Agreement. The list referred to above will contain at least the location (*geographical coordinates*), code group number used (*for UMTS only*), antenna azimuth and tilt and the corresponding channels (*carrier frequencies*) for each technology used.
- 3.2. The provisions in this Agreement in respect of the concerned bands, including new assignments, shall be applied from the date of effectiveness of the referred Agreement.

4. Operator Arrangements

- 4.1. All the arrangements required for existing base stations to fully comply with the provisions in the Agreement shall be performed **not later than 60 days after signing and publishing this document** or part of it for the operators' attention.
- 4.2. During the transition period, the operators that provide GSM or UMTS services in the countries of the Signatory Parties should notify and coordinate their activities when making the changes in their respective networks to avoid mutual interference, and inform the competent authority in their respective country accordingly.
- 4.3. Provisions of this Agreement are applicable for all channels in the frequency bands subject of this Agreement regardless if they are assigned or not.

5. Revision of the Agreement

This agreement may be modified at the request of any of the Signatory Authorities where such a modification becomes necessary in the light of administrative, regulatory or technical development (introduction of new technologies).

6. Withdrawal from the Agreement

Any Administration may withdraw from this Agreement subject to six (6) months notice.

7. Date of entry into force

This document, including the Appendices will enter into force at the date of its signature and its publication on the official website of the respective authorities.

Done in Prishtina on 22nd of May, 2013 in two original copies each in the official languages of the countries - Macedonian as per the Constitution of the Republic of Macedonia and Albanian as per the Constitution of the Republic of Kosova, and English. all the texts being equally authentic. In case of occurrence of any divergence for the purposes of interpreting this Agreement the English text shall prevail.

Done in PRISHTINA, on 22nd of MAY, 2013

*On behalf of Agency of Electronic Communications
of the Republic of Macedonia*

Robert Ordanovski
Director



*On behalf of Regulatory Authority of Electronic and
Postal Communications of the Republic of Kosova*

Ekrem Hoxha
Chairman of RAEPC Board



ANNEX 1

PRINCIPLES AND COORDINATION FIELD STRENGTH LEVELS FOR THE BORDER COORDINATION BETWEEN GSM AND UMTS SYSTEMS IN THE FREQUENCY BANDS 880-915 MHz/ 925-960 MHz, 1710-1785 MHz/ 1805-1880 MHz, 1900 - 1980 MHz, 2010 - 2025 MHz and 2110 - 2170 MHz

- 1) Frequency channels in the bands 925-960 MHz and 1805-1880 MHz for GSM systems using non-preferential frequencies may be used if the mean field strength of each carrier produced by the base station does not exceed a value of;
 - ❖ **GSM 900:** 19 dB μ V/m at a height of 3 m above ground at the borderline between two countries in the frequency band 925 - 960 MHz.
 - ❖ **GSM 1800:** 25 dB μ V/m at a height of 3 m above ground at the borderline between two countries in the frequency band 1805 - 1880 MHz.
- 2) Frequencies in the bands 925 - 960 MHz, 1805 - 1880 MHz and 2110 - 2170 MHz for systems using non-preferential codes and with center frequencies aligned may be used if the mean field strength of each carrier produced by the base station does not exceed a value of;
 - ❖ **UMTS 900:** 35 dB μ V/m/5MHz at a height of 3 m above ground at the borderline between two countries in the frequency band 925 - 960 MHz.
 - ❖ **UMTS 1800:** 41 dB μ V/m/5MHz at a height of 3 m above ground at the borderline between two countries in the frequency band 1805 - 1880 MHz.
 - ❖ **UMTS 2100:** 37 dB μ V/m/5MHz at a height of 3 m above ground at the border line between two countries in the frequency band 2110 - 2170 MHz.
- 3) Frequencies in the bands 1900 - 1920 MHz and 2010 - 2025 MHz for systems using non-preferential codes and with center frequencies aligned, or where center frequencies are not aligned may be used if the mean field strength of each carrier produced by the base station does not exceed a value of;
 - ❖ **UMTS TDD systems;** 21 dB μ V/m/5MHz at a height of 3 meter above the ground at and beyond the borderline between two countries.
- 4) For operators of both countries, all the technical parameters specified in paragraphs 1, 2 and 3 of this annex shall have a tolerance of maximum 3 km from the borderline. For distance more than a 3 km from the borderline into neighbouring country, the technical parameters specified in paragraphs 1, 2 and 3 shall not be exceeded in any case.

ANNEX 2

OVERVIEW OF ALLOCATED FREQUENCY BANDS PER OPERATOR AND USED TECHNOLOGIES IN MACEDONIA AND KOSOVA

a) Frequency band 900 MHz

KOSOVA

880	890	900	905	915
xxx	Vala (GSM)	XOp+KFOR	IPKO (GSM)	
925	935	945	950	960
xxx	Vala (GSM)	XOp+KFOR	IPKO (GSM)	

MACEDONIA

880	890	902.5	915
VIP Operator (GSM and UMTS)	T-Mobile (GSM)		ONE (GSM)
925	935	947.5	960
VIP Operator (GSM and UMTS)	T-Mobile (GSM)		ONE (GSM)

b) Frequency band 1800 MHz

KOSOVA

1710	1720	1730	1740	1750	1760	1770	1780	1785
IPKO (GSM)	Vala (GSM)	Xxx	xxx	xxx	xxx	xxx	xxx	xxx
1805	1815	1825	1835	1845	1855	1865	1875	1880
IPKO (GSM)	Vala (GSM)	Xxx	xxx	xxx	xxx	xxx	xxx	xxx

MACEDONIA

1710	1720	1730	1740	1750	1760	1770	1780	1785
VIP (GSM)	VIP (GSM)	T-Mobile (GSM)	xxx	xxx	xxx	xxx	xxx	xxx
1805	1815	1825	1835	1845	1855	1865	1875	1880
VIP (GSM)	VIP (GSM)	T-Mobile (GSM)	xxx	xxx	xxx	xxx	xxx	xxx

c) Frequency band 2100 MHz

KOSOVA

1920	1930	1935	1940	1945	1950	1960	1965	1970	1980
xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx

2110	2120	2125	2130	2135	2140	2150	2155	2160	2170
xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx

MACEDONIA

1920	1930	1935	1940	1945	1950	1960	1965	1970	1980
xxx	xxx	ONE (UMTS)	ONE (UMTS)		T-Mobile (UMTS)	T-M (UMTS)	xxx	xxx	xxx

2110	2120	2125	2130	2135	2140	2150	2155	2160	2170
xxx	xxx	ONE (UMTS)	ONE (UMTS)		T-Mobile (UMTS)	T-M (UMTS)	xxx	xxx	xxx