AGREEMENT

between the Administrations of
Croatia, Hungary, Romania,
Slovenia and Ukraine

on the frequency coordination for
fixed wireless systems
in the bands
27940.5 – 28444.5 MHz and 28948.5 – 29452.5 MHz

Budapest, 21 October 2005

28 GHz Agreement

1 Introduction

In the framework of the bi- or multilateral agreements dealing with frequency coordination in general, the Telecommunication Administrations of Croatia, Hungary, Romania, Slovenia and Ukraine concluded this agreement for the purpose of the frequency coordination for the fixed wireless systems in the frequency bands 27940.5 – 28444.5 MHz paired with 28948.5 – 29452.5 MHz. The relevant provisions of the general bi- or multilateral agreements dealing with frequency coordination (e.g. Berlin Agreement) in general shall apply unless otherwise laid down in this Agreement.

2 Principles – Background

2.1 The Administrations mentioned above deemed it necessary to conclude an agreement on the division of preferential frequencies for fixed wireless systems using FDD technology only. The channel arrangement used in the agreement is in conformity with CEPT Recommendation T/R 13-02 Annex C. The band 27940.5 – 28444.5 MHz paired with 28948.5 – 29452.5 MHz is designated for fixed service in ECC/DEC/(05)01. The use of the frequency bands shall be in accordance with ERC Recommendation (01)03 for FDD systems. These frequency bands may also be used for point-to-point systems as deemed appropriate by each Administration.

2.2 Preferential frequencies are frequencies which can be assigned by Administrations concerned without any coordination, provided that the provisions laid down in Paragraph 3.2 or 3.3 of this agreement are fulfilled.

2.3 Non-preferential frequencies are frequencies which can be assigned by Administrations concerned without any coordination, provided that the provisions laid down in Paragraph 3.4 or 3.5 of this agreement are fulfilled.

2.4 All other cases shall be coordinated.

2.5 Notifications for assignments are not necessary unless required by the procedure mentioned in paragraph 4.

2.6 The entire band 27940.5 – 28444.5 MHz paired with 28948.5 – 29452.5 MHz is divided into blocks of preferential frequencies in a way that equal access to the spectrum is ensured for each Administration. The frequency partitioning as outlined in this agreement may, however, be subject to bi- or multilateral accommodations negotiated on a case by case basis in the event that the actual frequency demand in particular border areas of the countries concerned requires modification of the frequency partitioning.

2.7 Operators shall have the possibility to cooperate in order to minimise interference and to achieve the most efficient use of the available

spectrum. Such agreements between operators shall be subject to confirmation by the Administrations concerned.

3 Technical provisions

3.1 The preferential frequency division is described in the Annex.

3.2 Transmitters of point-to-multipoint* systems using preferential frequencies may produce a spectral power flux density (pfd) not exceeding -105 dBW/(MHz.m^2) at a distance of 15 km inside the neighbouring country.

3.3 Transmitters in point-to-point links using preferential frequencies may produce a spectral power flux density (pfd) not exceeding -115 dBW/(MHz.m^2) at a distance of 25 km inside the neighbouring country.

3.4 Transmitters of point-to-multipoint* systems using non-preferential frequencies may produce a spectral power flux density (pfd) not exceeding -105 dBW/(MHz.m^2) at the border line.

3.5 Transmitters in point-to-point links using non-preferential frequencies may produce a spectral power flux density (pfd) not exceeding -115 dBW/(MHz.m^2) at the border line .

3.6 The calculation of the interfering spectral pfd shall be based on the Recommendation ITU-R P.452-12 on the basis of free space propagation and an atmospheric attenuation of 0.21 dB/km.

3.7 The above mentioned pfd values and the calculation of interference are provisional, and should be revised in accordance with relevant ECC documents to be developed or on the basis of practical experiences of the signatory administrations.

3.8 In case of multiple interferers at any point of the interference contour the resulting interfering signal shall be derived by summing up the contributing pfd values.

* Point-to-multipoint systems do not refer to a set of point-to-point links concentrating in the same node.

4 Procedure in case of harmful interference

4.1 In cases of harmful interference the Administrations affected shall inform each other and endeavour to mutually find solutions.

4.2 For exchange of data between Administrations the technical parameters as described in the general bi- or multilateral agreements in force shall be used.

5 Revision of this Agreement

5.1 The text of this Agreement can be revised in light of administrative, regulatory or technical developments at the proposal of any Signatory Administration with the agreement of all other Signatory Administrations required.

5.2 The revision of the preferential distribution annexed to this Agreement may be done with the agreement of the affected administrations. All the signatory administrations shall be informed about the approved changes.

6 Languages of the Agreement

This Agreement has been concluded in English.

7 Withdrawal from this Agreement

Any Administration may withdraw from this Agreement by the end of a calendar month by giving notice of its intention at least six months in advance. Frequency assignments notified within the framework of this Agreement prior to the date of entry into force of the withdrawal shall remain valid and be protected according to their status.

8 Date of entry into force

This agreement enters into force for each administration at the date of its signature, pending approval within 3 months if necessary according to the national legislation.

For the Administration of Croatia

Željko TABAKOVIĆ

For the Administration of Hungary

Dr. Emília ULELAY

For the Administration of Romania

Adrian IONESCU

For Administration of Slovenia

Meta PAVSEK TASKOV

For the Administration of Ukraine

Maryna BOLTS

PREFERENTIAL FREQUENCY DISTRIBUTION IN THE 28 GHz BAND

28 MHz channels			Zone							
Channel number	Center Frequency lower band [MHz]	Center Frequency upper band [MHz]	HNG-UKR	ROU-UKR	HNG-UKR-ROU	HNG-ROU	HNG-HRV	HNG-HRV-SVN	HRV-SVN	HNG-SVN
15	27954.5	28962.5	HNG	ROU	ROU	ROU	HNG	SVN	SVN	SVN
16	27982.5	28990.5	HNG	UKR	HNG	HNG	HNG	HNG	HRV	HNG
17	28010.5	29018.5	UKR	UKR	UKR	HNG	HRV	HRV	HRV	HNG
18	28038.5	29046.5	UKR	ROU	ROU	ROU	HRV	SVN	SVN	SVN
19	28066.5	29074.5	HNG*	ROU	HNG	HNG	HNG	HNG	SVN	HNG*
20	28094.5	29102.5	UKR*	UKR	UKR	ROU	HRV	HRV	HRV	SVN*
21	28122.5	29130.5	HNG*	ROU	ROU	ROU	HNG	SVN	SVN	SVN*
22	28150.5	29158.5	HNG*	UKR	HNG	HNG	HNG	HNG	HRV	HNG*
23	28178.5	29186.5	UKR*	UKR	UKR	HNG	HRV	HRV	HRV	SVN*
24	28206.5	29214.5	HNG*	ROU	ROU	ROU	HRV	SVN	SVN	SVN*
25	28234.5	29242.5	UKR*	UKR	UKR	ROU	HNG	HNG	SVN	HNG*
26	28262.5	29270.5	HNG*	UKR	HNG	HNG	HRV	HRV	HRV	HNG*
27	28290.5	29298.5	UKR*	ROU	ROU	ROU	HNG	SVN	SVN	SVN*
28	28318.5	29326.5	HNG*	ROU	HNG	HNG	HNG	HNG	HRV	HNG*
29	28346.5	29354.5	UKR*	ROU	ROU	ROU	HRV	HRV	HRV	SVN*
30	28374.5	29382.5	UKR*	UKR	UKR	HNG	HRV	SVN	SVN	SVN*
31	28402.5	29410.5	HNG*	ROU	HNG	HNG	HNG	HNG	SVN	HNG*
32	28430.5	29438.5	UKR*	UKR	UKR	ROU	HRV	HRV	HRV	HNG*

*** Existing agreement**

Preferential frequency distribution plans for SCG

PREFERENTIAL FREQUENCY DISTRIBUTION PLAN IN THE 3.5 GHz BAND

7 MHz channels			Zones						
Channel number	Center frequency lower band [MHz]	Center frequency upper band [MHz]	HNG-ROU*	ROU-SCG	HNG-ROU-SCG	HNG-SCG	HNG-HRV-SCG	HRV-SCG	HNG-HRV*
1	3413.5	3513.5	HNG	SCG	SCG	SCG	SCG	SCG	HNG
2	3420.5	3520.5	ROU	ROU	ROU	SCG	HRV	HRV	HRV
3	3427.5	3527.5	HNG	SCG	HNG	HNG	HNG	SCG	HNG
4	3434.5	3534.5	ROU	ROU	ROU	HNG	HRV	HRV	HRV
5	3441.5	3541.5	ROU	SCG	SCG	SCG	SCG	SCG	HRV
6	3448.5	3548.5	HNG	ROU	HNG	HNG	HNG	SCG	HNG
7	3455.5	3555.5	HNG	SCG	SCG	SCG	SCG	SCG	HRV
8	3462.5	3562.5	ROU	ROU	ROU	HNG	HRV	HRV	HRV
9	3469.5	3569.5	HNG	ROU	HNG	HNG	HNG	HRV	HNG
10	3476.5	3576.5	ROU	SCG	SCG	SCG	SCG	SCG	HNG
11	3483.5	3583.5	ROU	ROU	ROU	SCG	HRV	HRV	HRV
12	3490.5	3590.5	HNG	SCG	HNG	HNG	HNG	HRV	HNG

*** Existing agreement**

PREFERENTIAL FREQUENCY DISTRIBUTION PLAN IN THE 26 GHz BAND

28 MHz channels			Zone						
Channel number	Center frequency lower band [MHz]	Center frequency upper band [MHz]	HNG-ROU*	ROU-SCG	HNG-ROU-SCG	HNG-SCG	HNG-HRV-SCG	HRV-SCG	HNG-HRV*
1	24563	25571	ROU	SCG	SCG	SCG	HRV	HRV	HRV
2	24591	25599	ROU	SCG	SCG	SCG	SCG	SCG	HRV
3	24619	25627	HNG	ROU	HNG	HNG	HNG	HRV	HNG
4	24647	25655	HNG	ROU	HNG	HNG	HNG	HRV	HNG
5	24675	25683	ROU	SCG	SCG	SCG	SCG	SCG	HNG
6	24703	25711	ROU	ROU	ROU	HNG	HRV	HRV	HRV
7	24731	25739	HNG	ROU	HNG	HNG	HNG	SCG	HNG
8	24759	25767	HNG	SCG	SCG	SCG	SCG	SCG	HNG
9	24787	25795	ROU	ROU	ROU	HNG	HRV	HRV	HRV
10	24815	25823	HNG	SCG	HNG	HNG	HNG	SCG	HNG
11	24843	25851	ROU	ROU	ROU	HNG	HRV	HRV	HRV
12	24871	25879	HNG	SCG	SCG	SCG	SCG	SCG	HRV
13	24899	25907	ROU	ROU	ROU	SCG	SCG	SCG	HNG
14	24927	25935	ROU	ROU	ROU	SCG	HRV	HRV	HRV
15	24955	25963	HNG	SCG	SCG	SCG	SCG	SCG	HRV
16	24983	25991	HNG	SCG	HNG	HNG	HNG	SCG	HNG
17	25011	26019	HNG	SCG	HNG	HNG	HNG	HRV	HNG
18	25039	26047	ROU	ROU	ROU	SCG	HRV	HRV	HRV

*** Existing agreement**

PREFERENTIAL FREQUENCY DISTRIBUTION PLAN
IN THE 28 GHz BAND

ANNEX 7

28 MHz channels			Zone						
Channel number	Center Frequency lower band [MHz]	Center Frequency upper band [MHz]	HNG-ROU*	ROU-SCG	HNG-ROU-SCG	HNG-SCG	HNG-SCG-HRV	HRV-SCG	HNG-HRV*
15	27954.5	28962.5	ROU	ROU	ROU	SCG	SCG	SCG	HNG
16	27982.5	28990.5	HNG	SCG	HNG	HNG	HNG	HRV	HNG
17	28010.5	29018.5	HNG	SCG	SCG	SCG	HRV	HRV	HRV
18	28038.5	29046.5	ROU	SCG	SCG	SCG	SCG	SCG	HRV
19	28066.5	29074.5	HNG	ROU	HNG	HNG	HNG	SCG	HNG
20	28094.5	29102.5	ROU	ROU	ROU	HNG	HRV	HRV	HRV
21	28122.5	29130.5	ROU	ROU	ROU	SCG	SCG	SCG	HNG
22	28150.5	29158.5	HNG	ROU	HNG	HNG	HNG	HRV	HNG
23	28178.5	29186.5	HNG	SCG	SCG	SCG	HRV	HRV	HRV
24	28206.5	29214.5	ROU	SCG	SCG	SCG	SCG	SCG	HRV
25	28234.5	29242.5	ROU	ROU	ROU	HNG	HNG	SCG	HNG
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30	28374.5	29382.5	HNG	SCG	SCG	SCG	SCG	SCG	HRV
31	28402.5	29410.5	HNG	SCG	HNG	HNG	HNG	SCG	HNG
32	28430.5	29438.5	ROU	ROU	ROU	HNG	HRV	HRV	HRV

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