AGREEMENT

between the telecommunications authorities

of Estonia and Finland

concerning the use of the frequency bands 380-385 MHz / 390-395 MHz

for harmonised introduction of
the Digital Land Mobile System for the Emergency Services
(TETRA Emergency)

Helsinki – Tallinn 2004

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Section 1 - Use of frequencies for emergency services (TETRA) and other services in the frequency bands 380-385 MHz / 390-395 MHz

This co-ordination agreement is based upon actual CEPT/ERC Decisions and Recommendations for the frequency bands 380-385/390-395 MHz. That means the use of frequencies should be in accordance with e. g. ERC/DEC/(96)01, T/R 02-02E, ERC/DEC(01)19 (DMO) and ERC/DEC/(01)20 (AGA).

1.1 The frequency block numbering and the centre frequencies of the frequency pairs in the frequency bands 380-385 MHz / 390-395 MHz are presented in Annex 1. The size of one block is 2 * 250 kHz and there are 10 frequency pairs, each 25 kHz wide, in one block. The field strength values in sections 1.2 and 1.3 refer to 25 kHz receiver bandwidth. Other channel arrangements can be used if the field strengths will not exceed the values in sections 1.2 and 1.3.

1.2 Preferential frequency blocks of Estonia

1.2.1 **Estonia may use the frequency blocks 2, 3, 8, 9, 10 and 11 (EST1)** without co-ordination with Finland, if the field strength of every single carrier produced by a base station or a station used in an air craft does not exceed **54 dBμV/m at the line F**.

If there is a national need for more frequencies to be used for Air-Ground-Air (AGA) in Estonia than the harmonised AGA channels 193-200 from block 20 (section 1.5), the frequencies should be chosen from these blocks.

1.2.2 **Finland may use the frequency blocks 2, 3, 8, 9, 10 and 11 (EST1)** without co-ordination with Estonia, if the field strength of every single carrier produced by a base station or a station used in an air craft does not exceed **18 dBμV/m at the line F**. Finland shall not use the frequencies in these blocks nearer Estonia than the line F.

1.2.3 **Estonia may use the frequency blocks 12, 18, 19 and channels 168-170 from block 17 (EST2)** without co-ordination with Finland, if the field strength of every single carrier produced by a base station or a station used in an air craft does not exceed **54 dBμV/m at the line E.**

1.2.4 **Finland may use the frequency blocks 12, 18, 19 and channels 168-170 from block 17 (EST2)** without co-ordination with Estonia, if the field strength of every single carrier produced by a base station or a station used in an air craft does not exceed **18 dBμV/m at the line E.**

1.3 Preferential frequency blocks of Finland

1.3.1 **Finland may use the frequency blocks 4, 5, 6, 13, 14 and 15 (FIN1)** without co-ordination with Estonia, if the field strength of every single carrier produced by a base station or a station used in an air craft does not exceed **54 dBµV/m at the line E.**

If there is a national need for more frequencies to be used for Air-Ground-Air (AGA) in Finland than the harmonised AGA channels 193-200 from block 20 (section 1.5), the frequencies should be chosen from these blocks.

1.3.2 **Estonia may use the frequency blocks 4, 5, 6, 13, 14 and 15 (FIN1)** without co-ordination with Finland, if the field strength of every single carrier produced by a base station or a station used in an air craft does not exceed **18 dBµV/m at the line E.** Estonia shall not use the frequencies in these blocks nearer Finland than the line E.

1.3.3 **Finland may use the frequency blocks 7 and 16 and channels 7-10 from block 1, channels 161-167 from block 17 and channels 191-192 from block 20 (FIN2)** without co-ordination with Estonia, if the field strength of every single carrier produced by a base station or a station used in an air craft does not exceed **54 dBµV/m at the line F.**

1.3.4 **Estonia may use the frequency blocks 7 and 16 and channels 7-10 from block 1, channels 161-167 from block 17 and channels 191-192 from block 20 (FIN2)** without co-ordination with Finland, if the field strength of every single carrier produced by a base station or a station used in an air craft does not exceed **18 dBµV/m at the line F.**

1.4 Direct Mode Operation (DMO)

The channels 1-6 from block 1 are European harmonised channels for Direct Mode Operation (DMO). These channels can be used both nationally and for cross-border operation. If there is a national need for more frequencies to be used for DMO, the frequencies should be chosen from the national preference channels.

1.5 Air-Ground-Air (AGA)

The channels 193-200 from block 20 are European harmonised channels for Air-Ground-Air usage (AGA). If there is a national need for more frequencies to be used for AGA, the frequencies should be chosen from the national first class preference channels as indicated in sections 1.2.1 and 1.3.1.

1.6 Joint operation frequencies

The frequencies for joint operations shall be agreed separately.

Section 2 - General

2.1 A field strength exceeding the above mentioned levels shall be co-ordinated with the other country.

2.2 The power in the adjacent 25 kHz channel shall be attenuated by at least 60 dB at the frequency block edges to minimise any problems in the border areas.

2.3 The above mentioned field strength values are based on the following: height of receiving antenna 10 m, 10 % of time, 50 % of locations. The propagation model to be used to determine the interference field strength should be the method for point-to-area predictions for Terrestrial Services taken from the latest version of the relevant ITU-R Recommendation.

2.4 In the presence of interference the claims shall be shown in accordance with Appendix 10 of the Radio Regulations. The Parties shall take all possible measures in order to eliminate the interference.

Section 3 - Definition of the border lines between Estonia and Finland

Line E: The Estonian coast including the following islands: Saaremaa and Hiiumaa
Line F: The south coast of Finland

Section 4 - Revision or cancellation

4.1 This agreement may be revised or cancelled by common consent of both of the telecommunications authorities.

Section 5 - Entry into force

This Agreement shall be in force from the moment of signing of this Agreement.

This agreement has been drawn up in two identical copies, one for Estonia and one for Finland.
This Agreement replaces the previous Agreement from May 30, 1997.

Tallinn 2 June 2004
For the Estonian Administration

Mihkel Viskus
Deputy Director General
in duties of Director General

Helsinki 1 June 2004
For the Finnish Administration

Kari Koho
Director

Attachment: Annex1 - Preferential frequency division

PREFERENTIAL FREQUENCY DIVISION

Frequency band 380-385 / 390-395 MHz

250 kHz blocks (10 frequency pairs / block)

Block number	Channel	BSTX 1) MHz	BSRX 2) MHz	Preferential channels of
1	1	390,0125	380,0125	DMO
1	2	390,0375	380,0375	DMO
1	3	390,0625	380,0625	DMO
1	4	390,0875	380,0875	DMO
1	5	390,1125	380,1125	DMO
1	6	390,1375	380,1375	DMO
1	7	390,1625	380,1625	FIN2
1	8	390,1875	380,1875	FIN2
1	9	390,2125	380,2125	FIN2
1	10	390,2375	380,2375	FIN2
2	11	390,2625	380,2625	EST1
2	12	390,2875	380,2875	EST1
2	13	390,3125	380,3125	EST1
2	14	390,3375	380,3375	EST1
2	15	390,3625	380,3625	EST1
2	16	390,3875	380,3875	EST1
2	17	390,4125	380,4125	EST1
2	18	390,4375	380,4375	EST1
2	19	390,4625	380,4625	EST1
2	20	390,4875	380,4875	EST1
3	21	390,5125	380,5125	EST1
3	22	390,5375	380,5375	EST1
3	23	390,5625	380,5625	EST1
3	24	390,5875	380,5875	EST1
3	25	390,6125	380,6125	EST1
3	26	390,6375	380,6375	EST1
3	27	390,6625	380,6625	EST1
3	28	390,6875	380,6875	EST1
3	29	390,7125	380,7125	EST1
3	30	390,7375	380,7375	EST1
4	31	390,7625	380,7625	FIN1
4	32	390,7875	380,7875	FIN1
4	33	390,8125	380,8125	FIN1
4	34	390,8375	380,8375	FIN1
4	35	390,8625	380,8625	FIN1
4	36	390,8875	380,8875	FIN1
4	37	390,9125	380,9125	FIN1
4	38	390,9375	380,9375	FIN1
4	39	390,9625	380,9625	FIN1
4	40	390,9875	380,9875	FIN1

1) BSTX = centre frequency of the base station (fixed) transmitter = centre frequency of the mobile station receiver

2) BSRX = centre frequency of the base station (fixed) receiver = centre frequency of the mobile transmitter

Block number	Channel	BSTX MHz	BSRX MHz	Preferential channels of
5	41	391,0125	381,0125	FIN1
5	42	391,0375	381,0375	FIN1
5	43	391,0625	381,0625	FIN1
5	44	391,0875	381,0875	FIN1
5	45	391,1125	381,1125	FIN1
5	46	391,1375	381,1375	FIN1
5	47	391,1625	381,1625	FIN1
5	48	391,1875	381,1875	FIN1
5	49	391,2125	381,2125	FIN1
5	50	391,2375	381,2375	FIN1
6	51	391,2625	381,2625	FIN1
6	52	391,2875	381,2875	FIN1
6	53	391,3125	381,3125	FIN1
6	54	391,3375	381,3375	FIN1
6	55	391,3625	381,3625	FIN1
6	56	391,3875	381,3875	FIN1
6	57	391,4125	381,4125	FIN1
6	58	391,4375	381,4375	FIN1
6	59	391,4625	381,4625	FIN1
6	60	391,4875	381,4875	FIN1
7	61	391,5125	381,5125	FIN2
7	62	391,5375	381,5375	FIN2
7	63	391,5625	381,5625	FIN2
7	64	391,5875	381,5875	FIN2
7	65	391,6125	381,6125	FIN2
7	66	391,6375	381,6375	FIN2
7	67	391,6625	381,6625	FIN2
7	68	391,6875	381,6875	FIN2
7	69	391,7125	381,7125	FIN2
7	70	391,7375	381,7375	FIN2
8	71	391,7625	381,7625	EST1
8	72	391,7875	381,7875	EST1
8	73	391,8125	381,8125	EST1
8	74	391,8375	381,8375	EST1
8	75	391,8625	381,8625	EST1
8	76	391,8875	381,8875	EST1
8	77	391,9125	381,9125	EST1
8	78	391,9375	381,9375	EST1
8	79	391,9625	381,9625	EST1
8	80	391,9875	381,9875	EST1

Block number	Channel	BSTX MHz	BSRX MHz	Preferential channels of
9	81	392,0125	382,0125	EST1
9	82	392,0375	382,0375	EST1
9	83	392,0625	382,0625	EST1
9	84	392,0875	382,0875	EST1
9	85	392,1125	382,1125	EST1
9	86	392,1375	382,1375	EST1
9	87	392,1625	382,1625	EST1
9	88	392,1875	382,1875	EST1
9	89	392,2125	382,2125	EST1
9	90	392,2375	382,2375	EST1
10	91	392,2625	382,2625	EST1
10	92	392,2875	382,2875	EST1
10	93	392,3125	382,3125	EST1
10	94	392,3375	382,3375	EST1
10	95	392,3625	382,3625	EST1
10	96	392,3875	382,3875	EST1
10	97	392,4125	382,4125	EST1
10	98	392,4375	382,4375	EST1
10	99	392,4625	382,4625	EST1
10	100	392,4875	382,4875	EST1
11	101	392,5125	382,5125	EST1
11	102	392,5375	382,5375	EST1
11	103	392,5625	382,5625	EST1
11	104	392,5875	382,5875	EST1
11	105	392,6125	382,6125	EST1
11	106	392,6375	382,6375	EST1
11	107	392,6625	382,6625	EST1
11	108	392,6875	382,6875	EST1
11	109	392,7125	382,7125	EST1
11	110	392,7375	382,7375	EST1
12	111	392,7625	382,7625	EST2
12	112	392,7875	382,7875	EST2
12	113	392,8125	382,8125	EST2
12	114	392,8375	382,8375	EST2
12	115	392,8625	382,8625	EST2
12	116	392,8875	382,8875	EST2
12	117	392,9125	382,9125	EST2
12	118	392,9375	382,9375	EST2
12	119	392,9625	382,9625	EST2
12	120	392,9875	382,9875	EST2

Block number	Channel	BSTX MHz	BSRX MHz	Preferential channels of
13	121	393,0125	383,0125	FIN1
13	122	393,0375	383,0375	FIN1
13	123	393,0625	383,0625	FIN1
13	124	393,0875	383,0875	FIN1
13	125	393,1125	383,1125	FIN1
13	126	393,1375	383,1375	FIN1
13	127	393,1625	383,1625	FIN1
13	128	393,1875	383,1875	FIN1
13	129	393,2125	383,2125	FIN1
13	130	393,2375	383,2375	FIN1
14	131	393,2625	383,2625	FIN1
14	132	393,2875	383,2875	FIN1
14	133	393,3125	383,3125	FIN1
14	134	393,3375	383,3375	FIN1
14	135	393,3625	383,3625	FIN1
14	136	393,3875	383,3875	FIN1
14	137	393,4125	383,4125	FIN1
14	138	393,4375	383,4375	FIN1
14	139	393,4625	383,4625	FIN1
14	140	393,4875	383,4875	FIN1
15	141	393,5125	383,5125	FIN1
15	142	393,5375	383,5375	FIN1
15	143	393,5625	383,5625	FIN1
15	144	393,5875	383,5875	FIN1
15	145	393,6125	383,6125	FIN1
15	146	393,6375	383,6375	FIN1
15	147	393,6625	383,6625	FIN1
15	148	393,6875	383,6875	FIN1
15	149	393,7125	383,7125	FIN1
15	150	393,7375	383,7375	FIN1
16	151	393,7625	383,7625	FIN2
16	152	393,7875	383,7875	FIN2
16	153	393,8125	383,8125	FIN2
16	154	393,8375	383,8375	FIN2
16	155	393,8625	383,8625	FIN2
16	156	393,8875	383,8875	FIN2
16	157	393,9125	383,9125	FIN2
16	158	393,9375	383,9375	FIN2
16	159	393,9625	383,9625	FIN2
16	160	393,9875	383,9875	FIN2

Block number	Channel	BSTX MHz	BSRX MHz	Preferential channels of
17	161	394,0125	384,0125	FIN2
17	162	394,0375	384,0375	FIN2
17	163	394,0625	384,0625	FIN2
17	164	394,0875	384,0875	FIN2
17	165	394,1125	384,1125	FIN2
17	166	394,1375	384,1375	FIN2
17	167	394,1625	384,1625	FIN2
17	168	394,1875	384,1875	EST2
17	169	394,2125	384,2125	EST2
17	170	394,2375	384,2375	EST2
18	171	394,2625	384,2625	EST2
18	172	394,2875	384,2875	EST2
18	173	394,3125	384,3125	EST2
18	174	394,3375	384,3375	EST2
18	175	394,3625	384,3625	EST2
18	176	394,3875	384,3875	EST2
18	177	394,4125	384,4125	EST2
18	178	394,4375	384,4375	EST2
18	179	394,4625	384,4625	EST2
18	180	394,4875	384,4875	EST2
19	181	394,5125	384,5125	EST2
19	182	394,5375	384,5375	EST2
19	183	394,5625	384,5625	EST2
19	184	394,5875	384,5875	EST2
19	185	394,6125	384,6125	EST2
19	186	394,6375	384,6375	EST2
19	187	394,6625	384,6625	EST2
19	188	394,6875	384,6875	EST2
19	189	394,7125	384,7125	EST2
19	190	394,7375	384,7375	EST2
20	191	394,7625	384,7625	FIN2
20	192	394,7875	384,7875	FIN2
20	193	394,8125	384,8125	AGA
20	194	394,8375	384,8375	AGA
20	195	394,8625	384,8625	AGA
20	196	394,8875	384,8875	AGA
20	197	394,9125	384,9125	AGA
20	198	394,9375	384,9375	AGA
20	199	394,9625	384,9625	AGA
20	200	394,9875	384,9875	AGA