EUROPEAN RADIOCOMMUNICATIONS COMMITTEE

ERC Decision of 10 March 1999 on the adoption of approval regulations for equipment to be used for TDMA point-to-multipoint digital radio systems operating in the frequency range 1 to 3 GHz, based on the European Telecommunications Standard (ETS) 300 636

(ERC/DEC/(99)10)

EXPLANATORY MEMORANDUM

1 INTRODUCTION

The free movement of radiocommunications goods and the provision of Europe-wide services for radiocommunications are only achievable if there exist common regulations throughout Europe regarding availability of frequency bands, approval requirements and border crossing procedures. A basic requirement to fulfil these objectives is the Europe-wide implementation of national regulations based on the European Telecommunications Standards (ETSs) or European Norms (ENs) developed by the European Telecommunications Standards Institute (ETSI).

This Decision ERC/DEC/(99)10 provides the necessary mechanism for CEPT Administrations to commit themselves to implement, within their national regimes, European Telecommunications Standard 300 636[1] and withdraw any conflicting national standard.

2 BACKGROUND

Both the ERC and ETSI are involved in the development of common regulations, as described in (1) above. The Memorandum of Understanding between ERC and ETSI explains the respective responsibilities of the two organisations and its annex describes the principles of co-operation. The ERC, for its part, should, *inter alia*, adopt Decisions on the introduction of ETSI standards into approval regimes.

ETS 300 636 has been prepared by the Transmission and Multiplexing (TM) Technical Committee of ETSI. The standard has undergone the ETSI standards approval procedure and is now published as an ETS.

The ETS is based on CEPT Recommendation T/R 13-01 (for the bands 1350-1375 MHz paired with 1492-1517 MHz, 1375-1400 MHz paired with 1427-1452 MHz, 2025-2110 MHz paired with 2200-2290 MHz and 2520-2670 MHz).
The ETS is also based on ITU-R Recommendation F.701-1 (for the band 2300-2500 MHz).

The use of the frequency range 1 to 3 GHz covered by ETS 300 636 is not harmonised within CEPT. Administrations have adopted different arrangements, to meet national requirements, for minimum channel separation of 1.75 MHz. Further the equipment used in this frequency range is subject to national licensing and frequency planning which requires specification of, *inter alia*, frequency of operation and equivalent isotropically radiated power (e.i.r.p.).

Nevertheless, there are a number of parameters, in particular those considered by the ERC as essential for spectrum management purposes[2], which can be harmonised by adopting within approval regulations the limit values and measurement methods provided in ETS 300 636.

3 REQUIREMENT FOR AN ERC DECISION

The allocation and assignment of radio frequencies and the complementary equipment approval regimes in CEPT member countries are laid down by law, regulation or administrative action. The ERC recognises that for harmonised fixed and mobile radio services to be introduced successfully throughout Europe, manufacturers and operators must be given the confidence to make the necessary investment in the development and procurement of new systems. Commitment by CEPT Administrations to implement this ERC Decision will provide a clear indication that equipment conforming to approval regulations based on ETS 300 636 will have the benefit of a Europe-wide market.

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[1] ETS 300 636: *"Transmission and Multiplexing (TM); Time Division Multiple Access (TDMA) point-to-multipoint digital radio systems in the frequency range 1 to 3 GHz" Edition 1, 1996*

[2] ERC parameters necessary for spectrum management as agreed at the 11th ERC meeting in Brussels, June 1994

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"The European Conference of Postal and Telecommunications Administrations,

considering:

a) that CEPT has a long term objective to harmonise the use of frequencies and the related regulatory regimes;

b) that such harmonisation will benefit administrations, manufacturers, operators and users;

c) that ETSI has published ETS 300 636 for equipment to be used for TDMA point-to-multipoint digital radio systems in the frequency range 1 to 3 GHz with channel separations of 1.75, 2, 3.5 and 4 MHz;

d) that, for the foreseeable future, there will continue to be widespread use of radio systems in the fixed service having the technical characteristics described in (c) above;

e) that, in accordance with the Memorandum of Understanding between ERC and ETSI, the ERC shall adopt ERC Decisions on the introduction of ETSI standards into approval regimes;

f) that the use of radio equipment is subject to national licensing and frequency planning requirements, in particular for frequency of operation and e.i.r.p.;

g) that suitable transitional arrangements are given in CEPT Recommendation T/R 13-01 and ITU-R Recommendation F.701-1;

h) that adequate system parameters are essential for safety related systems and in order to ensure efficient use of the spectrum a minimum set of receiver parameters is required;

recognising:

that this Decision shall not impede EEA countries from fulfilling their obligations according to community law;

DECIDES

1. to adopt approval regulations for equipment to be used for TDMA point-to-multipoint radio systems in the 1 to 3 GHz frequency range with transmitter power levels of up to 3.2 W, based on the limit values and measurement methods for spectrum management parameters contained in ETS 300 636, with the exclusion by national choice of those parameters which are subject to national licensing requirements[3]. A list of spectrum management parameters to be included in approval regulations is given in Annex 1;

2. to withdraw any conflicting national approval regulation(s);

3. that this Decision shall enter into force on 15 March 1999;

4. that CEPT Member Administrations shall communicate the national measures implementing this Decision to the ERC Chairman and the ERO when the Decision is nationally implemented."

Note:
Please check the ERO web site (www.ero.dk) under "Documentation / Implementation" for the up to date position on the implementation of this and other ERC Decisions.

[3] Annex 2 is provided for information to show which options have been adopted by each administration in those cases where ETS 300 636 offers a choice

ANNEX 1

Parameters from ETS 300 636 to be included in approval regulations:

ETS 300 636	Section	Comments
RADIO CHARACTERISTICS [4]	**5**	
Frequency bands	5.1	
Channel arrangement	5.2	Options for transmission capacity with the appropriate channel spacings of 1.75, 2, 3.5 and 4 MHz. Manufacturers declaration
Transmitter characteristics	**5.3**	Options for channel spacings 1.75, 2, 3.5 and 4 MHz.
Transmitter power	5.3.1	
RF spectrum mask	5.3.2	
Spurious emissions	5.3.4	
Radio frequency tolerance	5.3.5	
Receiver characteristics	**5.4**	Options for channel spacings 1.75, 2, 3.5 and 4 MHz.
Input level range	5.4.1	
Spurious emissions	5.4.2	
BER performance	5.4.3	
Interference sensitivity	5.4.4	
Adjacent channel rejection	5.4.4.1	
Co-channel rejection	5.4.4.2	
Image frequency rejection	5.4.5	
RF equipment port	**5.5**	
RF interface	5.5.1	
Return loss	5.5.2	

[4] In some countries the spurious emissions and spurious radiations of transmitters and receivers are not considered as approval requirements but are essential requirements of the EMC Directive 89/336 EC for which alternative procedures apply.

ANNEX 2

Adoption of ETS 300 636: National variations

Administration	Application of ERC Rec. T/R 13-01 and ITU-R Rec. F.701-1 and adoption of channel spacing options	Sub-bands of ERC Rec. T/R 13-01 (Annexes A - D) and ITU-R Rec. F.701-1 available[5]	Adoption of options for environmental conditions
Albania			
Andorra			
Austria			
Belgium			
Bosnia and Herzegovina			
Bulgaria			
Croatia			
Cyprus			
Czech Republic	1 to 40		41 to 47
Denmark			
Estonia			
Finland			
France			
Germany		2540 - 2670 MHz	
Greece			
Hungary			
Iceland			
Ireland			
Italy			
Latvia		**B1, B2:** 1, 2, 6, 7, 11, 12, 21, 22, 31, 32	41 to 47
Liechtenstein			
Lithuania		**B1:** 1, 6, 11, 16, 21, 26, 31, 36; **B2:** 2, 7, 12, 17, 22, 27, 32, 37; **B3:** 3, 8, 13, 18, 23, 28, 33, 38: **B4:** 4, 9, 14, 19, 24, 29, 34, 39; **B5:** 5, 10, 15, 20, 25, 30, 35, 40;	41 to 47
Luxembourg			
Malta			
Moldova			
Monaco			
Netherlands			
Norway			
Poland			
Portugal			
Romania			
Russian Federation			
San Marino			
Slovak Republic			
Slovenia			
Spain			
Sweden			
Switzerland			
The Former Yugoslav Republic of Macedonia			
Turkey			

[5] Specify the real (sub-)bands authorised in case of partial usage

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Ukraine			
United Kingdom			
Vatican City			

[6] Specify the real (sub-)bands authorised in case of partial usage

Key:

Frequency bands options:

Option	Reference	Frequency bands (MHz)
B1	CEPT T/R 13-01 Annex A	1350-1375 paired with 1492-1517
B2	CEPT T/R 13-01 Annex B	1375-1400 paired with 1427-1452
B3	CEPT T/R 13-01 Annex C	2025-2110 paired with 2200-2290
B4	CEPT T/R 13-01 Annex D	2520-2670
B5	ITU-R F.701-1	2300-2500

Channel spacing options:

Option	Frequency Band	Spectrum efficiency class	Bit-rate (Mbit/s)	Channel spacings (MHz)
1	B1	1	2	1.75
2	B2			
3	B3			
4	B4			
5	B5			
6	B1	1	2	2
7	B2			
8	B3			
9	B4			
10	B5			
11	B1	1	2x2	3.5
12	B2			
13	B3			
14	B4			
15	B5			
16	B1	1	2x2	4
17	B2			
18	B3			
19	B4			
20	B5			
21	B1	2	2x2	3.5
22	B2			
23	B3			
24	B4			
25	B5			
26	B1	2	2x2	4
27	B2			
28	B3			
29	B4			
30	B5			
31	B1	2	2x4	3.5
32	B2			
33	B3			
34	B4			
35	B5			
36	B1	2	2x4	4
37	B2			
38	B3			
39	B4			
40	B5			

Class 1: equipment performances based on typically 2-state modulation scheme (e.g. 2-FSK (Frequency Shift Keying), Gaussian Minimum Shift Keying (GMSK) with discriminator detection, or equivalent).

Class 2: equipment performances based on typically 4-state modulation scheme (e.g. 4-FSK, 4-QAM (Quadrature Amplitude Modulation), or equivalent).

Environmental condition options

41 = Class 3.1
42 = Class 3.2
43 = Class 3.3
44 = Class 3.4
45 = Class 3.5
46 = Class 4.1
47 = Class 4.1E

Some countries may require a more stringent temperature range than is currently covered in this ETS.