ELECTRONIC COMMUNICATIONS COMMITTEE

ECC Decision
of 18 March 2005
on the use of the
Frequency Band 169.4 – 169.8125 MHz

(ECC/DEC/(05)02)
(2005/928/EC)
amended 5 September 2007

EXPLANATORY MEMORANDUM

1 INTRODUCTION

This ECC Decision addresses the frequency band 169.4 – 169.8125 MHz. This particular band has previously been designated for the European Radio Messaging System (ERMES) by the ERC/DEC(94)02, as well as by the EU Council Directive 90/544/EEC of 9 October 1990. In most European countries the paging systems have not reached the expected market penetration, and in some countries the demand for paging systems is actually decreasing. Therefore this Decision identifies additional applications for this frequency band.

2 BACKGROUND

The ERC/DEC(94)02 designated the frequency band 169.4125 – 169.8125 MHz for ERMES and divides the band into 16 frequency channels for these systems. The EU Council Directive 90/544/EEC also designated the band 169.4 – 169.8 MHz for the same purpose and states that these systems should have priority over and protection from other systems in the same band. The EU Directive also listed four preferred frequency channels for ERMES. Since the adoption of the ERC Decision and EU Directive the requirement for paging systems within Europe has changed. Therefore the ERO and the Frequency Management Working Group of the ECC collected information on the deployment of ERMES and other paging systems (in 1999 the European Commission recommended the end of exclusive use of the ERMES standard in the 169 MHz channels) in the frequency band 169.4 – 169.8125 MHz within Europe as well as the use of this band by other radio applications..

The information obtained showed (as of January 2002) that ERMES systems only remained operational in a few European countries. However, there were some countries in which paging systems were in operation, or licences were still in force. In some cases these licences cannot be withdrawn for legal reasons. On the other hand the information showed that in most countries some channels were available for other applications, and in several countries all 16 channels were available.

In recent years more emphasis has been put on the question of designation of harmonised frequency bands for several existing or new services, and therefore the WG FM has agreed to reconsider the use of the band 169.4 – 169.8 MHz, and many applications have been proposed for this frequency band. Based on information from administrations and interested parties it has been agreed that the following existing and new applications should be implemented in this band.

- **Meter reading systems**
  There is an increasing demand from utility companies among others for remote reading of meters for water usage, electricity etc. Since such meters are often installed in buildings or underground the upper part of the VHF band is particularly useful for this purpose. Meter reading equipment includes facilities for remote status monitoring and service commands.

- **Tracing and asset tracking systems**
  In the beginning 1998 the ERO prepared, following a Work Requirement (no.48400) in accordance with the "EC-ERO Framework Contract", the "Report on Alarm Systems for Tracing Lost or Stolen Items" This report among other things describes various tracing and tracking systems operating in different frequency bands. One of the recommendations in this report is that some frequencies should be designated in the VHF band alarm systems used for tracing lost or stolen items. The WG FM has previously made an unsuccessful attempt to harmonise frequencies for this purpose. There is a growing demand for systems for tracing lost or stolen (such as vehicles, car, boat, valuables, etc.), and the trade in stolen items has become an international problem.

- **Social alarms**
  The social alarm application is intended to assist persons, in particular elderly or disabled people summon assistance, when they are in a distress situation. This application requires reliable telecommunication systems and networks. A number of measures are taken in order to ensure the highest level of reliability, as is practically feasible, when designing and operating these systems. In 1997 the ERC adopted ERC/DEC(97)06 that designates the frequency band 869.20 – 869.25 MHz for the use of social alarm systems in accordance with CEPT Recommendation ERC/REC 70-03 on SRDs. However, at that time it was pointed out that a lower frequency range would have been better suited for this purpose because of wider coverage and better penetration in buildings, but no such harmonised frequency band within CEPT

could be found. Parts of the band 169.4 – 169.8125 MHz would be well suited for some types of social alarm systems.

- **Aids for hearing impaired**
  So far there have been no harmonised bands for these kinds of systems and frequencies have been designated according to national frequency tables with the result that these systems operate on many different frequencies throughout Europe. This again leads to segmentation of the market and more expensive equipment for the users of such systems. The increased mobility of people and equipment gives rise to an increased demand for some harmonised spectrum for aids for the hearing impaired, and a part of the band 169.4 – 169.8125 MHz band should be set aside for this purpose. Even so there would still be a need for other frequencies designated on a national basis to satisfy all the requirements for these kinds of systems.

- **Applications for temporary use**
  Applications for temporary use include mostly PMR systems that are licensed for short periods from say a day or two up to about a few months is to assist organisation of entertainment and other special events. The main purpose for harmonising frequencies for this is to ease the licensing procedures during international events for which it is impossible to change frequencies of the transceivers during border crossing. Especially due to the fact that there is a need to use these frequencies from high altitude for wide area distribution of information implying long interference ranges and need for strict regulations. In between such events the frequencies may be used temporarily on a national basis. This application should be an alternative to the preferred applications in the high power part of the band.

- **Paging system**
  Simplex paging systems using a base station with the mobile as a receiver only using different protocols including in some case the ERMES protocol. Existing paging systems should be allowed to remain in operation as long as required or as long as the licences for these systems are valid, and develop as the technology progresses.

The European Commission has issued a Mandate to CEPT to review the frequency band 169.4 – 169.8125 MHz in the light of the Community policy. The Mandate specifies that the regulation of this band should be technology neutral and reflect European Community policies such as applications for assistance to persons with disabilities and judicial co-operation (i.e. tracking of stolen goods).

3 REQUIREMENT FOR AN ECC DECISION

The allocation or designation of frequency bands for use by a service or system under specified conditions in CEPT member countries is laid down by law, regulation or administration action. A commitment by CEPT member countries to implement an ECC Decision will provide a clear indication that the required frequency bands will be made available on time and on a European-wide basis. The amount of spectrum requirements and dates of availability will be reviewed from time to time. ERO should collect and make publicly available information from administrations about the implementation of this ECC Decision.

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Comparable technical specifications to those given in this ECC Decision are given in EC Decision no. (2005/928/EC). EU Member States and, if so approved by the EEA Joint Committee, Iceland, Liechtenstein and Norway are obliged to implement the EC Decision.

"The European Conference of Postal and Telecommunications Administrations,

considering

a) that harmonised spectrum can provide the best conditions for the introduction of new or emerging pan-European applications;

b) that the use of the band 169.4 – 169.8125 MHz is to a certain extent harmonised within Europe and that this harmonisation should at least be maintained or if possible extended. Changes to the usage of this band should be made in a way that is consistent with the Mission Statement of the ECC;

c) that when introducing new applications in the band 169.4 – 169.8125 MHz account should be taken of the existing applications in this band such as paging and PMR, and that these existing applications should be allowed to remain in operation as long as required or as long as the licences for these applications are valid;

d) that CEPT Recommendation T/R 25-07 regarding the band 169.4125 – 169.8125 MHz remains in force in relation to the paging and other incumbent systems that remain operational in the band;

e) that existing paging systems cannot be re-allocated due to great technical problems or heavy cost implications;

f) that the preferred high power paging channels were chosen to include those channels known to be used by existing paging systems. Channel 9 should be avoided to protect low power devices and channel 14 due to incompatibility with broadcasting;

g) that development to existing systems or the creation of new systems for non-preferred applications on a national basis should be minimised, and in any case be implemented in such a manner as not to constrain the harmonised implementation of the preferred applications;

h) that new paging systems in particular could preferentially use PMR/PAMR bands as identified in ERC Report 25;

i) that the compatibility studies assuming worst case conditions indicate possible areas of interference between the proposed applications, but the actual usage of these applications will alleviate the situation, see ECC Report no. 55;

j) that the designation of spectrum to one or more particular applications should only be done on a technological neutral basis;

k) that the EC has given the CEPT a mandate to review the band 169.4 – 169.8125 MHz in the light of the Community policy.

DECIDES

1. that the band 169.4 – 169.8125 MHz shall be divided into a low power part and a high power part;

2. that the frequency usage of the band 169.4 – 169.8125 MHz is as shown in Annex 1 to this Decision;

3. that the preferred applications in the low power part of band 169.4 – 169.8125 MHz are as follows:
    a. Aids for hearing impaired (exclusive use);
    b. Social alarms (exclusive use);
    c. Meter reading systems (non-exclusive use);
    d. Low power transmitters for tracking and asset tracing systems (non-exclusive use).

4. that the preferred applications for the high power part of the band 169.4 – 169.8125 MHz are as follows:
    a. High power transmitters for tracking and asset tracing systems;
    b. Existing paging systems or paging systems relocating from other channels in the band.

5. that alternative applications should be implemented in such a manner as not to constrain the harmonised implementation of the preferred applications;

6. that the alternative applications for the band 169.4 – 169.8125 MHz are:
    a. for the non-exclusive, low power part of the band, aids for the hearing impaired;
    b. on a national basis in the high power part of the band, tracing, paging, temporary use or PMR;

7. that existing paging systems and PMR systems in the band 169.4 – 169.8125 MHz, not in accordance with the frequency plan in Annex 1, may be allowed to remain in operation as long as required or as long as the licences for these services are valid;

8. that the maximum radiated power in the low power part of the band 169.4 – 169.8125 MHz shall be limited to 0.5 Watt erp;

9. that the maximum duty cycles for the meter reading systems and tracing and asset tracking system (low power part) are <10 % and <1 % respectively;

10. that this Decision shall enter into force on 18 March 2005;

11. that the CEPT Member administrations shall communicate the national measures implementing this Decision to the ECC Chairman and the Office when the Decision is nationally implemented."

Note:
Please check the Office web site (http//:www.ero.dk) for the up to date position on the implementation of this and other ECC decisions.

Frequency plan for the 169.4 – 169.8125 MHz band

<table>
<tr><td colspan="10">Low power applications</td><td rowspan="5">“Guard band”</td><td colspan="16">High power applications</td></tr>
<tr><td colspan="6">Specific low power applications</td><td>So. al.</td><td colspan="2">Hearing aids</td><td>So. al.</td><td>Trac.</td><td colspan="2">Paging</td><td colspan="2">Paging</td><td colspan="2">Paging</td><td colspan="2">Trac.</td><td colspan="2">Trac.</td><td colspan="2">Paging</td><td colspan="2">Trac.</td></tr>
<tr><td colspan="6">Hearing aids</td><td colspan="4">Exclusive use</td><td colspan="16">These channels could be used on a national basis for high power application such as paging, tracing, temporary use or PMR.</td></tr>
<tr><td colspan="6">12.5</td><td>12.5</td><td colspan="2">50</td><td>12.5</td><td colspan="16">12.5 (1)</td></tr>
<tr><td>1a</td><td>1b</td><td>2a</td><td>2b</td><td>3a</td><td>3b</td><td>4a</td><td colspan="2">4b+5+6a</td><td>6b+7+8a</td><td>8b</td><td>9a</td><td>9b</td><td>10a</td><td>10b</td><td>11a</td><td>11b</td><td>12a</td><td>12b</td><td>13a</td><td>13b</td><td>14a</td><td>14b</td><td>15a</td><td>15b</td><td>16a</td><td>16b</td></tr>
</table>

Legend:

- 1st row: category application, i.e. low power applications or high power applications;
- 2nd row: preferred applications:
  Specific low power applications see *decides* 3c and 3d
  So. al. means social alarm systems see *decides* 3b
  Hearing aids see *decides* 3a
  Trac. means tracking and tracing system (high power part) see *decides* 4a
  Paging see *decides* 4b
- 3rd row: alternative applications, see *decides* 5 and 6;
- 4th and 5th rows: channel raster (in kHz) and channel number.

(1): Due to the possibility of using any high power channel for the temporary use application. However, to facilitate border coordination, systems using 25 kHz channels should respect the channel raster starting from the lower edge of the channel 9.

Channelling arrangement for the band 169.4 – 169.8125 MHz

12.5 kHz bandwidth		25 kHz bandwidth		50 kHz bandwidth	
Ch. no	**Centre freq.**	**Ch. no**	**Centre freq.**	**Ch. no**	**Centre freq.**
1a	169.406250	1	169,412500		
1b	169.418750			“0”	169.437500
2a	169.431250	2	169.437500		
2b	169.443750				
3a	169.456250	3	169.462500		
3b	169.468750				
4a	169.481250	4	169.487500		
4b	169.493750			“1”	169.512500
5a	169.506250	5	169.512500		
5b	169.518750				
6a	169.531250	6	169.537500		
6b	169.543750			“2”	169.562500
7a	169.556250	7	169.562500		
7b	169.568750				
8a	169.581250	8	169.587500		
8b	169.593750				
12.5 kHz “guard band”					
9a	169.618750	9	169.62500		
9b	169.631250				
10a	169.643750	10	169.65000		
10b	169.656250				
11a	169.668750	11	169.67500		
11b	169.681250				
12a	169.693750	12	169.70000		
12b	169.706250				
13a	169.718750	13	169.72500		
13b	169.731250				
14a	169.743750	14	169.75000		
14b	169.756250				
15a	169.768750	15	169.77500		
15b	169.781250				
16a	169.793750	16	169.80000		
16b	169.806250				