



ECC Decision (06)06

The availability of frequency bands for the introduction of Narrow Band Digital Land Mobile PMR/PAMR in the 80 MHz, 160 MHz and 400 MHz bands

Approved 07 July 2006

Amended 8 November 2013

EXPLANATORY MEMORANDUM

1 INTRODUCTION

This ECC Decision addresses the use of the bands 68-87.5 MHz, 146-174 MHz, 406.1-430 MHz, and 440-470 MHz which are planned for narrow band applications within the land mobile service. The term Narrow Band Digital Land Mobile PMR/PAMR is intended to cover digital systems such as digital single or duplex frequency systems with and without base stations, radio trunked mode systems which offer fast set-up calls, many services such as single, group, priority and emergency calls, data, etc. These systems may be operated self provided, self-used or third party provided.

2 BACKGROUND

Although analogue PMR/PAMR equipment is still in use it is expected that the new delivered equipment will be digital across all market segments. This ECC Decision has been developed in order to provide confidence to industry and potential users that the necessary frequency spectrum to meet the digital requirements will be provided in CEPT countries in accordance with the market developments.

The CEPT/ERC Recommendation T/R 25-08 (revised 2008) provides the planning criteria and coordination of frequencies for the land mobile service in the range 29.7-921 MHz. Those radio applications do not refer to a special standard or specification. This ECC Decision covers both duplex operation and single frequency operation in which the latter one includes e.g. simplex operation and TDD (Time Division Duplex) operation.

This ECC Decision covers exclusively the designation and especially the availability of frequency bands. This means the relevant bands should be designated in the national frequency usage tables and should be made available by the administrations. The current software controlled radio equipment technology offers the flexibility with regard to different frequency availability situations within the CEPT member countries, which facilitates European frequency planning. Separate ECC Decisions are required to deal with the licence (service/telecommunication licence and/or radio licence) related matters and for the carriage and use of equipment throughout Europe. Definitions, descriptions and further information regarding PMR/PAMR can be found in ERC Report 73 and ECC Report 25.

Resolution 224, as revised by WRC-07 and WRC-12, identifies the frequency band 450-470 MHz for International Mobile Telecommunications (IMT) through footnote 5.286AA of the Radio Regulations. The band 450-470 MHz is allocated to the mobile service on a primary basis in all three ITU Regions and IMT systems have been deployed in some countries of the three Regions.

Current spectrum efficiency for analogue PMR is one channel in 12.5 kHz, while new digital technologies provide a two-fold increase to 6.25 kHz equivalent. The current industry estimate in the 2011-2012 timeframe for digital market share is 30-40% and the industry estimate for percentage of digital sales is 70%. Experience so far with digital PMR/PAMR suggests users use the extra capacity to improve operations (perhaps for data), so the two-fold efficiency does not materialise. In time, as more systems move to digital, the benefit will materialise.

New digital technologies provide 6.25 kHz equivalent spectrum efficiency, but there has been so far no motivation on users to replace equipment. ETSI standardised digital PMR solutions such as TETRA25, DMR or dPMR are considered as having 6.25 kHz efficiency. In fact, TETRA25 (4 logical channels within 25 kHz channel bandwidth and TDMA spectrum access), DMR (2 logical channels within 12.5 kHz channel bandwidth and TDMA spectrum access) or dPMR (1 channel FDMA in 6.25 kHz channel bandwidth) provide 6.25 kHz spectral efficiency.

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 administrations is laid down by law, regulation or administration action. It is considered necessary to designate and implement frequency bands for Narrow Band Digital Land Mobile PMR/PAMR. Only the real availability of an appropriate amount of radio spectrum and not only the designation within the national frequency usage tables encourages manufacturers and operators to make the necessary investments in these radiocommunication technologies.

**ECC Decision
of 7 July 2006
amended 8 November 2013**

**on the availability of frequency bands for
the introduction of Narrow Band Digital Land Mobile PMR/PAMR
in the 80 MHz, 160 MHz and 400 MHz bands**

(ECC/DEC/(06)06)

“The European Conference of Postal and Telecommunications Administrations,

considering

- a) that there is a need to identify spectrum for the introduction of the narrowband digital land mobile PMR/PAMR in Europe;
- b) that in the European Table of Frequency Allocations and Applications in the Frequency Range 8.3 kHz to 3000 GHz (ERC Report 25) the band 150.05-153.00 MHz is allocated on a primary basis to both the mobile service (except aeronautical mobile service) and the radio astronomy service and the band 406.1-410 MHz is allocated on a primary basis to both the land mobile service and the radio astronomy service whereas footnote 5.149 of the Radio Regulations urges administrations to take all practicable steps to protect the radio astronomy service from harmful interference. Footnote 5.149 also applies to the band 73.0-74.6 MHz;
- c) that footnote 5.286AA of the Radio Regulations, identifies the band 450-470 MHz for use by administrations wishing to implement International Mobile Telecommunications, with reference to Resolution 224 (Rev.WRC-07)¹
- d) that other relevant footnotes of the Radio Regulations should also be taken into account when identifying spectrum for Narrowband Digital Land Mobile PMR/PAMR;
- e) that parts of the bands identified in this Decision are allocated to radio services other than the Land Mobile Service and the usage of these bands may be subject to agreements between neighbouring countries in accordance with the ITU Radio Regulations;
- f) that ERC Recommendation T/R 25-08 (revised version of 2008) provides recommended channelling arrangements including the duplex spacings;
- g) that multilateral/bilateral agreements on frequency coordination in border areas can have an influence on the availability of radio spectrum;
- h) that software controlled radio equipment offers flexibility with regard to different frequency availability situations within CEPT administrations;
- i) that ECC Report 25 (2003) on the Strategic Plan for PMR/PAMR provides guidelines for the migration from analogue to digital narrow band applications and the migration from narrow band digital to wide band digital applications;
- j) that the experience has shown that the migration from narrow band digital to wide band digital applications has not been developed as expected when ECC Report 25 had been adopted;
- k) that ETSI has published the harmonised standards EN 300 113-2, EN 300 390-2, EN 302 561 and EN 301 166-2;
- l) that ETSI has published TS 102 361 on "Digital Mobile Radio (DMR) Systems" and ETSI TS 102 658 on "Digital Private Mobile Radio";
- m) that ECC Decision (04)06 identifies the 400 MHz bands also for Wide Band Digital Land Mobile PMR/PAMR;

¹ Resolution 224 was revised by WRC-12.

- n) that administrations may consider identification of a minimum required spectral efficiency to support the migration to digital, more spectrum efficient technology which will allow the creation of additional channel capacity within the same radio spectrum, and support more users. This also provides an opportunity to upgrade radio systems and improve interoperability.
- o) that based on available digital narrowband PMR/PAMR technology and the national needs, the administration may impose a minimum required spectral efficiency such as 6.25 kHz or 12.5 kHz;
- p) that other relevant ECC Decisions should also be taken into account when identifying spectrum for Narrow Band Digital Land Mobile PMR/PAMR;
- q) that Narrow Band Digital Land Mobile PMR/PAMR systems include digital paging systems such as Narrow band Point-to-Multipoint (NP2M) systems;
- r) that in EU/EFTA countries the radio equipment that is under the scope of this Decision shall comply with the R&TTE Directive. Conformity with the essential requirements of the R&TTE Directive may be demonstrated by compliance with the applicable harmonised European standard(s) or by using the other conformity assessment procedures set out in the R&TTE Directive.

DECIDES

- 1. that this Decision covers Narrow Band Digital Land Mobile PMR/PAMR using channel spacing up to 25 kHz, including digital paging systems;
- 2. that a sufficient amount of spectrum shall be made available in response to market demand for Narrow Band Digital Land Mobile PMR/PAMR within one or more of the following bands
 - 68-87.5 MHz,
 - 146-174 MHz;
 - 406.1-410 MHz,
 - 410-430 MHz,
 - 440-450 MHz,
 - 450-470 MHz;
- 3. that this Decision enters into force on 8 November 2013;
- 4. that the preferred* date for implementation of this Decision shall be 8 May 2014;
- 5. that CEPT 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 documentation database <http://www.ecodocdb.dk> for the up to date position on the implementation of this and other ECC Decisions.