

EUROPEAN RADIOCOMMUNICATIONS COMMITTEE

ERC Decision
of 1 June 1999
on the designation of the harmonised frequency band
40.5 to 43.5 GHz for the introduction of
Multimedia Wireless Systems (MWS)
and
Point-to-Point (P-P) Fixed Wireless Systems

(ERC/DEC/(99)15)

amended by ECC 5 March 2010



EXPLANATORY MEMORANDUM

1 INTRODUCTION

In 1996, the ERC adopted ERC/DEC/(96)05 on "The harmonised frequency band to be designated for the introduction of the Multipoint Video Distribution Systems (MVDS)". This Decision harmonised the band 40.5-42.5 GHz for the distribution of television programmes, commonly termed Multipoint Video Distribution Systems (MVDS). A typical MVDS consisted of a point-to-multipoint distribution system covering subscribers' premises within particular areas or "cells". The system was used as an alternative to cable television distribution networks or as an extension to a cable network and additionally allowed a small degree of interactivity.

In 1998, the ERC recognised a need to take into account the requirements of MWS and to encourage the use of digital technologies and so initiated the revision of ERC/DEC/(96)05 and the development of this ERC Decision. ERC/DEC/(96)05 was withdrawn in 1999 by ERC/DEC/(99)16.

For the purpose of this Decision, Multimedia Wireless Systems (MWS) in the 40.5-43.5 GHz band are defined as terrestrial multipoint systems which have their origin in telecommunication and/or broadcasting and which provide fixed wireless access direct to the end user for multimedia services. These MWS may offer different degrees of interactivity.

A revision of this ERC Decision was initiated in 2009 in order to take into account the demand for Point-to-Point (P-P) Fixed Wireless Systems in the 40.5-43.5 GHz band. The need for P-P Fixed Wireless Systems for large data capacity over short hops, e.g. for transport infrastructures needed for mobile communication networks below 6 GHz, is rapidly increasing. Other fixed service frequency bands, such as 23 GHz and 38 GHz, are already congested and therefore a further frequency band is needed. The 40.5-43.5 GHz band, of which propagation characteristics are very similar to 38 GHz, represents its natural extension. On the other hand it is obvious that other radio applications, such as IMT-2000/UMTS (see ECC/DEC/(05)05) and BWA (see ECC/DEC/(07)02), significantly reduce market opportunities for MWS in the 40.5-43.5 GHz band. These other radio applications being operated in bands below 6 GHz are suitable to provide fixed, nomadic and mobile usage.

Therefore ECC decided to allow the operation of P-P Fixed Wireless Systems in the 40.5-43.5 GHz band on an optional basis. These systems are intended to be used for infrastructure purposes and/or providing access to the end user. The recommended guidelines for the accommodation and assignment of MWS and P-P Fixed Wireless Systems in the frequency band 40.5-43.5 GHz are provided by the revised version of ECC Recommendation (01)04 (Rottach-Egern, February 2010).

2 BACKGROUND

In ITU Region 1 the band 40.5-42.5 GHz has also been allocated to the broadcasting-satellite, broadcasting and fixed services, while the band 42.5-43.5 GHz has been allocated to the fixed service.

To better cope with national market demand, the following coherent options are envisaged for the long-term use of the 40.5-43.5 GHz band:

- a) Mixed and flexible use of different systems (e.g. point-to-point, point-to-multipoint and multipoint-to-multipoint systems with both FDD and TDD) using block assignment with "Block Edge Mask (BEM) methodology" within the band;
- b) Use of channel arrangement for the deployment of point-to-point systems by conventional "link by link assignment";
- c) Flexible band segmentation for the use of both of the above assignment methodologies.

In order to cater for the mix of technologies and services to be delivered it is most appropriate that a block (or blocks) of spectrum should be made available to a potential operator in a manner consistent with the technology and market that the operator may wish to address. It is a requirement of the block assignment process, detailed in revised ECC/REC/(01)04, that systems supporting both symmetric and asymmetric traffic are accommodated as well as systems that employ FDD and TDD techniques. No presumption is made regarding the architecture of any MWS network or P-P Fixed Wireless Systems within the blocks.

3 REQUIREMENT FOR AN ERC/ECC DECISION

The allocation of radio frequencies in CEPT countries is laid down by law, regulation or administrative action. The ECC recognises that for Multimedia Wireless Systems (MWS) and for Point-to-Point (P-P) Fixed Wireless Systems in the 40.5-43.5 GHz band to be introduced successfully throughout Europe, manufacturers and operators must be given the confidence to make the necessary investment in the new pan-European radio communications systems and services. Commitment by CEPT countries to implement an ERC or ECC Decision will provide a clear indication that the required frequency bands will be made available on time and on a CEPT-wide basis.

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"The European Conference of Postal and Telecommunications Administrations,

considering

- a) that the band 40.5-42.5 GHz has been, inter alia, allocated by the ITU, in Region 1, on a primary basis to the broadcasting, broadcasting-satellite and fixed services;
- b) that the band 42.5-43.5 GHz has been allocated by the ITU, in Region 1, on a primary basis to the fixed, fixed-satellite (Earth-to-space), mobile (except aeronautical mobile) and radio astronomy services;
- c) that in the band 40.5-43.5 GHz ECC has given a clear priority to terrestrial services;
- d) that No. 5.547 of the ITU Radio Regulations regarding high-density applications applies also to the band 40.5-43.5 GHz;
- e) that in the band 42.5-43.5 GHz, sharing between the radio astronomy service and MWS or P-P Fixed Wireless Systems respectively is feasible on a geographical basis;
- f) that the band 40.5-43.5 GHz should provide a sufficient amount of spectrum to facilitate MWS as well as P-P Fixed Wireless Systems for a number of competing operators;
- g) that ECC Recommendation (01)04, revised in Rottach-Egern, February 2010, defines recommended guidelines for the accommodation and assignment of MWS and P-P Fixed Wireless Systems in the frequency band 40.5-43.5 GHz;
- h) that multipoint systems (point-to-multipoint or multipoint-to-multipoint systems) can provide broadband multimedia wireless services in the 40.5-43.5 GHz band, including telephony, video, media streaming and data services;
- i) that there is a need of P-P Fixed Wireless Systems for large data capacity transport, e.g. for mobile communication networks below 6 GHz;
- j) that MWS can offer a variety of user bit rates including those from primary rate (144 kbit/s) up to as high as 25 Mbit/s, or more, in flexible bandwidth arrangements;
- k) that the return channels for MWS could, if necessary, also be accommodated in other bands;
- l) that a flexible frequency arrangement would enable MWS and P-P Fixed Wireless Systems to coexist with legacy systems in the 40.5-43.5 GHz band;
- m) that ECC/DEC/(02)04 states that in the band 40.5-42.5 GHz, uncoordinated Earth stations in the fixed-satellite service (space-to-Earth) or broadcasting-satellite service shall not claim protection from stations of the fixed and the broadcasting services;
- n) that ETSI has published the European Standard EN 301 997-2 V1.1.1 regarding "Radio equipment for use in Multimedia Wireless Systems (MWS) in the frequency band 40.5 GHz to 43.5 GHz; Part 2: Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive";

- o) that ETSI has started to revise the European Standard ETSI EN 302 217-2-2 V1.3.1 regarding “Fixed Radio Systems; Characteristics and requirements for point-to-point equipment and antennas; Part 2-2: Digital systems operating in frequency bands where frequency co-ordination is applied; Harmonized EN covering the essential requirements of Article 3.2 of the R&TTE Directive“;
- p) 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 the purpose of this Decision is to designate the frequency band 40.5-43.5 GHz, or parts of it, for Multimedia Wireless Systems (MWS) and/or for Point-to-Point (P-P) Fixed Wireless Systems;
2. that, for the purpose of the Decision, the following definitions apply:
 - a) Multimedia Wireless Systems (MWS) shall mean terrestrial multipoint systems which have their origin in telecommunication and/or broadcasting and which provide fixed wireless access direct to the end user for multimedia services. These MWS may offer different degrees of interactivity;
 - b) Point-to-Point (P-P) Fixed Wireless Systems shall mean point-to-point links within the fixed service, to be used for infrastructure purposes and/or access to the end user;
3. that CEPT administrations shall designate a suitable amount of spectrum within 40.5-43.5 GHz for MWS and/or for P-P Fixed Wireless Systems according to their national market demand;
4. that this Decision enters into force on 5 March 2010;
5. that the preferred date for implementation of the amended version of this Decision shall be 30 June 2010;
6. that CEPT administrations shall communicate the national measures implementing this Decision to the ECC Chairman and the Office when the Decision is nationally implemented."

Notes:

- 1 Please check the Office web site (<http://www.ero.dk>) for the up to date position on the implementation of this and other ERC/ECC Decisions.