

# **ELECTRONIC COMMUNICATIONS COMMITTEE**

ECC Decision  
of 15 November 2002  
on the designation of frequency band 2500 – 2690 MHz  
for UMTS/IMT-2000

(ECC/DEC/(02)06)





## EXPLANATORY MEMORANDUM

### 1 INTRODUCTION

There is a general understanding of the need of IMT-2000 services and corresponding spectrum requirements within Europe/CEPT to satisfy the society development with increasing needs of high bit rates for mobile services covering capacity needs, particularly for dense traffic areas.

There is also a growing interest in the evolution and development of UMTS/IMT-2000 services in addition to the ones launched during year 2002 within Europe. UMTS is part of IMT-2000, which is developed within the ITU on a world wide level. The radio interfaces of the IMT-2000 are specified in ITU Recommendation ITU-R M.1457, "Detailed Specifications of the Radio Interfaces of IMT-2000".

The first ERC Decision on UMTS, ERC Dec (97)07, was adopted by the ERC in 1997. Since then a large amount of activity has been ongoing within Europe involving manufacturers, operators and regulators. The ERC Dec (97)07 has then been extended with ERC Dec(00)01. Within the ITU Radiocommunications Sector the development of IMT-2000 and systems beyond is one of the main issues being discussed. UMTS/IMT-2000 is considered in many groups such as ECC (PT1 former TG 1), the UMTS Forum, ITU-R (WP 8F, former TG 8/1) and the 3<sup>rd</sup> Generation Partnership Projects (3GPPs).

The rapid progression of mobile issues and the results of WRC-2000 call for further ECC Decisions that will take into account these developments and which enables CEPT to implement the necessary regulatory regime for the designation of all the bands identified for UMTS/IMT-2000.

As a follow up to the WRC-2000 Resolutions 223 and 225, which have identified additional spectrum for the terrestrial and the satellite components of IMT-2000 systems, the European Commission issued, on 9 March 2001, a Mandate 4<sup>1</sup> calling upon CEPT to undertake preliminary investigations and to adopt a first set of harmonising measures necessary to ensure the availability in the Community of harmonised additional frequency bands for the provision of IMT-2000 services.

### 2 BACKGROUND

The CEPT has recognised the importance of UMTS/IMT-2000 for the whole community and the work and responsibilities of ERC TG1 was therefore transferred into ERC PT1, now ECC PT1.

The first IMT-2000 systems have been introduced within Europe utilising the frequency bands identified for IMT-2000 at the WARC-92 in RR 5.388 and in accordance with the ERC Decision (99)07.

Pursuant to their 'UMTS Decision', the European Commission has issued a series of mandates to CEPT. In response to mandate 1, the ERC subsequently adopted the Decision ERC/DEC(00)01 making available by 1 January 2002 at the latest, in accordance with commercial demand and subject to national licensing schemes, the full 'core bandwidth' (155 MHz) for terrestrial UMTS. A further mandate 2 resulted in the ERC Decision ERC/DEC/(99)25 of 29 November 1999 which contains the spectrum plan for the usage of the 'core band' and provides a common approach to be followed by CEPT administrations when licensing IMT-2000/UMTS services to operate in the 'core band'. In July 1999, the Commission issued a Mandate 3 for the development of a common plan to identify, with a view to make available between the years 2005 and 2010, *additional* frequency spectrum for the provision of terrestrial 3G mobile and wireless services in the Community. This resulted in a European Common Proposal (ECP) for 160 MHz of additional spectrum for the terrestrial component of IMT-2000.

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<sup>1</sup> Mandate to CEPT to harmonise frequency usage in order to facilitate a co-ordinated implementation in the Community of third generation mobile and wireless communication systems operating in additional frequency bands as identified by WRC-2000 for IMT-2000 systems, 9 March 2001.

Mandate 4 has triggered a decision process intended to guarantee that sufficient additional spectrum for third generation mobile and wireless communication systems will be made available in the European Union in due time, in a co-ordinated manner and based on market demand. The Commission proposed that CEPT should follow a staged approach for the deliverables requested by Mandate 4, ultimately leading to the adoption, by 31 March 2003, of an **ECC Decision** designating the additional frequency bands to be used for IMT-2000 systems and defining a 'reference date' by which the additional spectrum should become available. The outcome of the preliminary investigations undertaken by CEPT and the validation of its findings should be described in a **Report** from CEPT to be delivered to the Commission by 30 November 2002. This Report from CEPT should provide a validation of the initial proposals developed by CEPT and the basis for the decisions subsequently enshrined in a formal **ECC Decision**.

The CPM report to WRC-2000 concluded on total spectrum requirements for the terrestrial element of IMT-2000 for the three Regions, which were based on the sum of the spectrum identified for IMT-2000 in RR **5.388**, the spectrum identified in the three Regions for existing second generation systems and an additional spectrum requirement to meet the forecasted traffic volume in geographic areas where the traffic was expected to be the highest. This additional spectrum was estimated to be 160 MHz in all three Regions by 2010. Europe fully supported these conclusions. Also during WRC-2000 European Common Proposals were successful on identification of additional spectrum for the terrestrial and satellite components of IMT-2000, including the main candidate band 2500-2690 MHz.

The standardisation work for UMTS/IMT-2000 started in ETSI (European Telecommunications Standards Institute) in 1991. ETSI has defined the system concept and reference model and the standard for UMTS Release 99 was finalised by the end of 1999. The technical specifications are written by the 3GPPs and transformed into standards by the regional standardisation organisations, including ETSI.

In May 1996 European regulators, operators and manufacturers established the UMTS Forum. The UMTS Forum has a group dealing with spectrum issues, Spectrum Aspects Group. The most important view of the Spectrum Aspects Group developed in preparation for the WRC-2000 was that the required spectrum for UMTS/IMT-2000 at year 2005 and year 2010 should be identified at WRC-2000 in as few bands as possible to facilitate the global roaming. Through its input to ERC TG1, the UMTS Forum has also contributed to the evaluation of additional spectrum requirements for UMTS/IMT-2000.

### 3 REQUIREMENT FOR AN ECC DECISION

The allocation or designation of a frequency band for its use by a service or system under specified conditions in CEPT member countries is laid down by law, regulation or administrative action. The ECC recognises that for UMTS/IMT-2000 to be deployed successfully throughout Europe, manufacturers and operators must be given the confidence to make the necessary investments in this extension of these radiocommunication systems and services. Therefore ECC believes that it is necessary to designate from the outset of all bands identified at WRC-2000 an adequate amount of spectrum. This was to provide an additional band to the already adopted bands in accordance with the ERC Decision(00)01, creating the environment for multiple commercial operators to offer additional bandwidth with the possibility to expand the service when the market demands so require. This will enable the multiple operator environment while giving all operators the possibility to offer additional capacity, particularly for dense traffic areas and new services. The users will benefit from the full range of services that UMTS/IMT-2000 make possible, with a reduced risk of bandwidth congestion. A commitment by CEPT member countries to implement an ECC Decision for the additional frequency band will provide a clear indication that the required frequency bands for further and future service demands will be made available on time and on a European-wide basis.

There is now an urgent need for an ECC Decision identifying the additional UMTS/IMT-2000 band at 2.5 GHz for terrestrial services in accordance with WRC-2000 outcome as complement to the existing ERC/DEC/00)01. The ECC Decision on the additional band for UMTS/IMT-2000 should be embedded in a flexible approach that will allow room to adapt to specific national situations and needs while giving firm guidelines to administrations, operators, and manufacturers.

The detailed spectrum arrangements for the band 2500-2690 MHz will be decided by the end of year 2004.

**ECC DECISION  
15 November 2002**

**on the designation of frequency band 2500 - 2690 MHz for  
UMTS/IMT-2000**

**(ECC/DEC/(02)06)**

“The European Conference of Postal and Telecommunications Administrations,

*considering*

- a) that the ITU has identified at WARC-92 the frequency bands 1885 - 2025 MHz and 2110 - 2200 MHz for the International Mobile Telecommunications (IMT-2000);
- b) that CEPT has adopted the ERC Decision (97)07 on the frequency bands for the introduction of the Universal Mobile Telecommunications System (UMTS);
- c) that the ERC Decision (97) 07 designates the frequency bands 1900 - 1980 MHz, 2010 - 2025 MHz and 2110 - 2170 MHz to terrestrial UMTS applications;
- d) that the ERC Decision (97) 07 indicates that the satellite component of UMTS can be accommodated in the bands 1980 – 2010 MHz and 2170 – 2200 MHz;
- e) that CEPT has extended ERC Decision (97)07 with ERC Decision (00)01 to fully exploit the whole 155 MHz available in Europe for terrestrial UMTS;
- f) that before the WRC-2000 ITU-R estimated the frequency requirements for terrestrial mobile spectrum in ITU Region 1 to be 555 MHz by the year 2010. This is to be fulfilled in Europe through the frequency bands designated to be used for second generation mobile services, the frequency bands designated in ERC/DEC/(97)07 and from within the band 2500 – 2690 MHz;
- g) that the main CEPT IMT-2000 proposal to WRC-2000 was the identification of the frequency band 2500 – 2690 MHz for IMT-2000 expansion;
- h) that the CEPT priority for WRC-2000 was the identification of additional spectrum for the terrestrial component of IMT-2000;
- i) that WRC-2000 identified additional frequency bands for IMT-2000 in RR 5.384A of the Radio Regulations together with Resolutions 223 and 225;
- j) that there is a need to facilitate UMTS interoperability throughout Europe;
- k) that the bands 880 - 915 MHz, 925 - 960 MHz, 1710 - 1785 MHz and 1805 - 1880 MHz are currently used for GSM (2<sup>nd</sup> generation terrestrial mobile system) in most CEPT member countries and are expected to be used by UMTS/IMT-2000 (3<sup>rd</sup> generation terrestrial mobile system) only in the longer term after the additional spectrum at 2.5 GHz has been utilised;
- l) that the band 2500 - 2690 MHz is currently used for the fixed and/or mobile service in most CEPT member countries;
- m) that there will be differences in the demand for UMTS/IMT-2000 spectrum across Europe which could lead to an offset in timescales concerning the introduction of the additional band 2500 – 2690 MHz for UMTS/IMT-2000;
- n) that it is the view of CEPT that ITU-R should recommend globally harmonised frequency arrangements for all of the additional IMT-2000 terrestrial bands, with a view to publishing channel arrangements in one or more ITU-R Recommendation(s);
- o) that further information is necessary prior to the development of ECC Decision on frequency arrangements in the band 2500-2690 MHz considering the traffic asymmetry and other market requirements;

- p) that the European Common Table of Frequency Allocations and Utilisation (ERC Report No 25, revised January 2002) is indicating the bands 2500 – 2520 MHz and 2670 – 2690 MHz to be used for the extension of UMTS/IMT-2000 terrestrial and satellite component;
- q) that there are planned separate ECC Decisions covering detailed planning of the band 2500 - 2690 MHz and related transitional arrangements;
- r) that there is planned a separate ECC Report covering adjacent band compatibility for the band 2500 – 2690 MHz.

*recognising*

- a) that to facilitate global roaming it is important to have harmonised spectrum, licensing and circulation arrangements for the use of IMT-2000 terminals;
- b) the Mandate No.4 from the EC, which requests CEPT to develop and adopt the measures necessary to ensure the availability in the Community of harmonised frequency bands, within the additional spectrum bands identified by WRC2000 for the provision of terrestrial and satellite UMTS/IMT-2000 services;
- c) that flexibility should be afforded to administrations to determine, at a national level, the availability of the 2500 – 2690 MHz band for UMTS/IMT-2000 in order to meet their specific deployment of existing systems, market demand and other national considerations;

**DECIDES**

1. to designate the frequency band 2500 – 2690 MHz to UMTS/IMT-2000 systems;
2. that the frequency band 2500 – 2690 MHz should be made available for use by UMTS/IMT-2000 systems by 1 January 2008, subject to market demand and national licensing schemes;
3. to designate the frequency band 2520 – 2670 MHz for use by terrestrial UMTS/IMT-2000 systems, and;
4. that the detailed spectrum arrangements for the band 2500 – 2690 MHz as well as the utilisation of the bands 2500 – 2520 MHz / 2670 – 2690 MHz shall be decided in an additional ECC Decision by the end of 2004;
5. that this Decision shall enter into force on 15 November 2002, and;
6. that 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 CEPT web site (<http://www.CEPT.org>) for the up to date position on the implementation of this and other ECC Decisions.*