

EUROPEAN RADIOCOMMUNICATIONS COMMITTEE

ERC Decision
of 30 June 1997
on the frequency bands for the introduction of the
Universal Mobile Telecommunications System
(UMTS)

(ERC/DEC/(97)07)



WITHDRAWN

EXPLANATORY MEMORANDUM

1. INTRODUCTION

Further to current second generation mobile services there is a need to develop a new generation wireless, wideband system with enhanced characteristics such as video, multimedia, flexible service provision, universal coverage, support of data rates up to 144 kbit/s for wide area coverage and up to 2 Mbit/s for local area coverage. The Universal Mobile Telecommunications System (UMTS) will meet these demands.

It is envisaged that UMTS will:

- have a spectrum environment able to respond to long-term 21st-century evolution and growth of services and applications;
- bring about fixed and mobile, public and private, network convergence;
- effectively integrate cellular, cordless, paging, data, pmr, satellite, etc., systems;
- support a multiplicity of operators, service providers and applications;
- plan for European-wide roll-out of new mobile, broadband, multi-media and information services;
- expect mobile terminal transmission needs to vary between and during calls;
- assume multi-mode terminals of widely differing capabilities.

UMTS is to be compatible with the International Mobile Telecommunications (IMT-2000), formerly known as Future Public Land Mobile Telecommunications System (FPLMTS), being developed within the ITU on a world wide level. Therefore, UMTS will use the frequencies identified for IMT-2000 at WARC 92 and take into account ITU Recommendations. Consequently, the minimum requirements of IMT-2000 as approved by the ITU, i.e. 144 kbit/s wide area coverage, 384 kbit/s local area coverage, 2 Mbit/s indoor coverage and 9.6 kbit/s satellite coverage, will be met by UMTS.

The European Radiocommunication Office (ERO) of the ERC has developed a report on UMTS, as a work requirement for the European Commission, gathering information from administrations and potential operators, manufacturers and other interested parties. The result has been an evaluation of spectrum requirements and timescales related to UMTS. The details of this Decision are based on this comprehensive work.

2. BACKGROUND

The cellular mobile market has grown tremendously over the past years and new services are constantly emerging within the information society.

The European Commission has proposed in the Green Paper "A common approach in the field of mobile and personal communications in the European Union", that specific action should be taken to establish an ERC Decision for the allocation of harmonised bands with sufficient spectrum resources for the Universal Mobile Telecommunications System (UMTS). Furthermore, extensive research on UMTS was conducted within the RACE Programme and now this work is being carried on within the ACTS Programme of the European Commission.

The standardisation work for UMTS started in ETSI (European Telecommunications Standards Institute) in 1991. ETSI has defined the system concept and reference model and it is expected that the standard for UMTS will be finalised by the end of 1999. Through its input to the ERO study on UMTS, ETSI has also contributed to the progression of spectrum issues.

In May 1996 European regulators, operators and manufacturers established the UMTS Forum which has amongst its objectives the establishment of a common view on the development and implementation of UMTS, which builds on the success of GSM, as well as strategic guidance to the standardisation work, aiming for a global system outline by 2000, with pilot system introduction starting in 2002 and mass commercial introduction by 2005. The aim of the UMTS Forum, which also has a group dealing with spectrum issues, is to realise these objectives based on an industry wide consensus view. The most important view of the spectrum group is that the IMT-2000 spectrum should be identified as the core band for UMTS.

3. REQUIREMENT FOR AN ERC 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 ERC recognises that for UMTS to be introduced successfully throughout Europe, manufacturers and operators must be given the confidence to make the necessary investment in this new radiocommunications system and service. Therefore ERC believes that it is necessary to designate from the outset an adequate amount of spectrum to provide core bands, creating the environment for multiple commercial operators to offer broadband services. This will enable the multiple operator environment with all operators offering new broadband services. A commitment by CEPT member countries to implement an ERC Decision will provide a clear indication that the required frequency bands will be made available on time and on a European-wide basis.

As confirmed at the ERO UMTS Workshop on 6 June 1996, there is a need for an ERC Decision identifying the IMT-2000 band as the core band for UMTS. The ERC Decision on UMTS should be embedded in a flexible approach that will allow some room to adapt to specific national situations and needs while giving firm guidelines to administrations, operators, and manufacturers. For the time being satellite and terrestrial use should not be mixed.

The question of additional bands for UMTS should be decided at a later point in time. Consequently it should be possible to look into different sharing scenarios and/or reallocation costs in further detail. Moreover, it will also be possible to study the market, i.e. how second generation services and UMTS are developing, in further detail so that requirements can be predicted more accurately at a future point in time.

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The European Conference of Postal and Telecommunications Administrations,

considering:

- a) that there is a growing demand not only for mobile voice services, but also for mobile data services up to 144 kbit/s and with certain restrictions in mobility up to 2 Mbit/s;
- b) that UMTS is being developed to meet this demand;
- c) that UMTS will offer third generation mobile services;
- d) that UMTS is to be compatible with the International Mobile Telecommunications (IMT-2000), formerly known as Future Public Land Mobile Telecommunications System (FPLMTS), being developed within the ITU;
- e) that WARC 92 adopted Resolution 212 and WRC 95 updated this solution;
- f) that the bands 1900-2025 MHz and 2110-2200 MHz are currently used for the fixed and/or mobile service in several CEPT member countries;
- g) that there will be differences in the demand for UMTS spectrum across Europe which could lead to an offset in timescales concerning the service introduction and the availability of frequencies;
- h) that ETSI is currently standardising UMTS with the aim of having specifications ready by the end of 1999;
- i) that in general sharing between the satellite and the terrestrial component of IMT-2000 is not feasible, however further study of sharing between terrestrial indoor use and satellite (space-to-Earth) use is required;
- j) that in other parts of the world the introduction of systems into parts of the frequency bands identified for the introduction of IMT-2000 has already commenced;
- k) that spectrum requirements for UMTS are preliminarily estimated to go beyond the spectrum made available for IMT-2000 through footnote S5.388 of the Radio Regulations of the ITU when mass market breakthrough occurs;
- l) that further studies are necessary to estimate the exact requirements for UMTS and where additional spectrum, if required, can be made available;
- m) that there are separate ERC Decisions covering the MSS bands at 2 GHz and related transitional arrangements,

DECIDES

1. that for the purpose of this Decision, the Universal Mobile Telecommunications System (UMTS) shall mean equipment complying with the European Telecommunications Standards for UMTS;
2. to designate the frequency bands 1900 - 1980 MHz, 2100 - 2200 MHz and 2110 - 2170 MHz to terrestrial UMTS applications;
3. to accommodate UMTS satellite component applications within the bands 1980 - 2010 MHz and 2170 - 2200 MHz;
4. that at least 2 x 40 MHz in the bands 1900 - 1980 MHz and 2110 - 2170 MHz shall be made available for UMTS by 1 January 2002. Further spectrum could be made available from the bands in Decides 2 by 1 January 2005 subject to market demand;
5. that the spectrum requirements and the date of availability will be reviewed once UMTS has been introduced and some experience has been gained on practical operational requirements;
6. that this Decision shall enter into force on 1 October 1997;
7. 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.