

ELECTRONIC COMMUNICATIONS COMMITTEE

ECC Decision
of 15 March 2002
on the frequency bands to be designated
for the co-ordinated introduction of
Road Transport and Traffic Telematic Systems

(ECC/DEC/(02)01)



EXPLANATORY MEMORANDUM

1 INTRODUCTION

Within Europe, there is increasing interest in the development of a fully Integrated road transport environment to improve all aspects of road transport. Communications systems will be an essential element of a future transport infrastructure for Europe, in particular, mobile data links between vehicles and between vehicles and the roadside infrastructure will be required for various applications including automatic toll-collection, route guidance and collision avoidance. The generic name for such applications is Road Transport and Traffic Telematics (RTTT).

RTTT links may be realised using infra-red or radio-based technology. For radio-based RTTT systems to be deployed within a trans-European road network, it is essential for common frequency bands, associated harmonised equipment standards and agreements on free circulation of equipment to be available throughout Europe.

The designation of frequency bands and the preparation of free circulation agreements are the responsibility of the Electronic Communications Committee (ECC). The development of equipment standards is the responsibility of the European Telecommunications Standards Institute (ETSI).

2 BACKGROUND

Within Europe, the largest research programme concerned with the improvement of road safety, transport efficiency and environmental quality is the European Community's Research and Development Programme DRIVE (Dedicated Road Infrastructure for Vehicle Safety in Europe), adopted by Council Decision 88/416/EEC¹ in 1988. DRIVE identified a number of applications requiring radio frequencies and, through the Commission of the European Communities, approached the former ERC ("European Radiocommunications Committee", now ECC) with a request to identify suitable frequency bands which could be made available throughout Europe.

After careful consideration, including a survey of frequency availability in each CEPT member country, the ERC identified in its Report 3² and its Recommendation T/R 22-04 the frequency bands to be designated for Road Transport information systems. Later the Recommendation T/R 22-04³ was superseded by Annex 5 to ERC Recommendation 70-03, in which the ERC recommended, that the frequency bands to be designated for RTTT systems should be:

- 5.795-5.805 GHz for initial road-to-vehicle systems;
- 5.805-5.815 GHz, to be used on a national basis to meet the requirements of multi-lane road junctions;
- 63-64 GHz vehicle-to-vehicle and road-to-vehicle systems;
- 76-77 GHz for vehicular and infrastructure radar systems.

The Recommendation has designated these frequency bands for RTTT systems on a non-exclusive basis, on the basis that there is a high degree of compatibility with existing systems and that RTTT applications will be designed as intelligent systems with robust signalling protocols.

In 2001, new proposals were made to broaden the use of the 76-77 GHz band to the infrastructure systems (such as vehicle speed measurement, vehicle counting, inter vehicle range measurement, vehicle classification, traffic jam detection, lane occupation rate, wrong way driving detection). The ERC Decision (92)02 should be withdrawn and be replaced by this ECC Decision taking into account these proposals and also align it with the new regulatory regime.

¹ Council Decisions 88/416/EEC on a Community programme in the field of road transport informatics and telecommunications (DRIVE) O.J. L206

² ERC Report 3: Harmonisation of frequency bands to be designated for road transport information systems

³ Recommendation T/R 22-04 (Lisbon 1991): Harmonisation of frequency bands for road transport information systems (RTI)

3 REQUIREMENT FOR AN ECC DECISION

The allocation of radio frequencies in CEPT member countries is laid down by law, regulation or administrative action. The ECC recognises that for RTTT systems to be introduced successfully throughout Europe, manufacturers and operators must be given the confidence to make the necessary investment in the new pan-European radiocommunications systems and services. 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 Europe-wide basis.

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“The European Conference of Postal and Telecommunications Administrations,

considering

- a) that within Europe, there are proposals to develop a trans-European road transport network with the objectives of improving road safety, transport efficiency and the quality of the environment;
- b) that many of these proposals are dependent on systems to provide data communication between road vehicles and between vehicles and the road infrastructure for various information-based travel and transport applications;
- c) that such systems are known generically as Road Transport and Traffic Telematic (RTTT) systems;
- d) that RTTT systems may use infra-red or radio-based technology;
- e) that the successful introduction of radio-based systems will depend upon the provision of common frequency bands throughout Europe and associated harmonised equipment standards;
- f) that in order to give manufacturers and operators the confidence to make massive investment in new pan-European radiocommunications systems and services, they need a clear indication that the required frequency bands will be made available on time and on a Europe-wide basis;
- g) that a major European RTTT research and development programme has shown that for technical and commercial reasons, frequency bands both below 10 GHz and above 50 GHz are required;
- h) that the ECC has identified⁴ the band 5.795-5.805 GHz with a possible extension in the band 5.805-5.815 GHz, taking account of national situations, as the most suitable frequency band for the initial Road Transport and Traffic Telematic systems in Europe. Additionally, the band 63-64 GHz has been identified for future vehicle-to-vehicle or road-to-vehicle systems and the band 76-77 GHz for vehicular and infrastructure radar systems;
- i) that the use of these bands for Road Transport and Traffic Telematic systems is in accordance with the Radio Regulations of the International Telecommunication Union (ITU);
- j) that the Radio Regulations designate the band 5.725-5.875 GHz (center frequency 5.8 GHz) for industrial, scientific and medical (ISM) applications;
- k) that the frequency bands identified for RTTT systems are used by existing services in accordance with the Radio Regulations;
- l) that it is not possible to fully protect the RTTT systems from interference from ISM or services operating in accordance with the Radio Regulations;
- m) that RTTT systems must be designed to enable frequency sharing with other systems and services;
- n) that this Decision does not cover RTTT systems using infra-red technology.

⁴ ERC Report 3: Harmonisation of frequency bands to be designated for road transport information systems

DECIDES

1. that for the purpose of this Decision, RTTT systems are defined as systems providing data communication between road vehicles and between road vehicles and the road infrastructure for various information-based travel and transport applications;
2. to designate, on a non-exclusive basis, for RTTT systems the frequency bands 5.795-5.805 GHz (with possible extension to 5.815 GHz), 63-64 GHz and 76-77 GHz, in accordance with Decides 3, 4 and 5 and subject to Decides 6;
3. that the band 5.795-5.805 GHz shall be used for initial road-to-vehicle systems, in particular road toll systems, with an additional sub-band, 5.805-5.815 GHz, to be used on a national basis to meet the requirements of multi-lane road junctions;
4. that the band 63-64 GHz shall be used for all vehicle-to-vehicle or road-to-vehicle systems;
5. that the band 76-77 GHz shall be used for vehicular or infrastructure radar systems;
6. that RTTT systems operating in these bands shall conform to such standards as are developed by the European Telecommunications Standards Institute (ETSI) for RTTT systems or any equivalent standards;
7. that this Decision will enter into force on 15 March 2002;
8. 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 CEPT web site(<http://www.CEPT.org>) for the up to date position on the implementation of this and other ECC Decisions