ELECTRONIC COMMUNICATIONS COMMITTEE

ECC Decision
of 19 March 2004
on the frequency band 77 – 81 GHz to be designated for
the use of Automotive Short Range Radars

(ECC/DEC/(04)03)

EXPLANATORY MEMORANDUM

1 INTRODUCTION

Within Europe, there are proposals to improve road safety by using new information communications technologies, including building a European strategy to accelerate the research and development, deployment and use of intelligent road safety systems such as Automotive Short Range Radars (SRR).

SRR systems will be a significant element of a future transport infrastructure for Europe and in particular contribute to the long term goal of the European Commission *e*-safety initiative.

To support a quick development and deployment of SRR systems within a trans-European road network, it is essential that common frequency bands and associated harmonised equipment standards be available throughout Europe. A stable and permanent solution needs to be made available as soon as possible in order to support the European industry developments in this area.

2 BACKGROUND

To meet the requirement for a permanent, long term solution for short range radars the frequency band 77-81 GHz has been identified. Compatibility issues within this band have been successfully studied and a system reference document with market information as well as technical information has been agreed within ETSI as the basis for a frequency designation within the ECC.

The 76-77 GHz frequency band was designated for vehicular and infrastructure radar systems in ERC Recommendation 70-03 and in ECC Decision (02)01. This frequency band is used by long range radar systems which are not compatible with Ultra Wide Band (UWB) SRR systems. Thus a new frequency band of 4 GHz for Automotive (UWB) Short Range Radars is needed within the 79 GHz range 77-81 GHz.

In order to support industry developments of the general and specific SRR technology within the 79 GHz range the frequency band 77-81 GHz should be made available throughout Europe as soon as possible.

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 recognizes that for SRR 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 improve road safety by using new information communications technologies, including building a European strategy to accelerate the research and development, deployment and use of intelligent road safety systems such as Automotive Short Range Radars (SRR);

b) that the availability of spectrum for SRR equipment in Europe would contribute to the long term goal of the European Commission *e*-Safety-initiative;

c) that in order to give the automotive industry as well as the components industry the confidence to make substantial investment in Short Range Radar technology, they need a clear indication that the required frequency bands will be made available on time, and on a Europe-wide and permanent basis;

d) that in order to address these goals the EC issued a mandate to CEPT 31 July 2003 under the Spectrum Decision 676/2002/EC 'Mandate to CEPT to harmonise radio spectrum to facilitate a coordinated EU introduction of Automotive Short Range Radar systems'

e) that the use of the 79 GHz frequency range (77-81 GHz) has been considered as the most suitable band for Short Range Radars;

f) that the development and use of the 79 GHz technology will have a beneficial effect to European industry;

g) that the sharing with Radio Astronomy Service has been studied concluding that regulatory measures could be identified enabling the coexistence between SRR in the frequency band 77-81 GHz and the Radio Astronomy Service, which is dependent on the aggregated impact of SRR devices transmitting in the direction of a radio astronomy station;

h) that the use of SRR within the band 77-81 may be incompatible with the Radio Amateur Service which has been resolved by allowing the Amateur Service to remain in the 75.5-76 GHz band after 2006 (see footnote 5.559A);

i) that information has been received from NATO that there are currently no radiolocation systems operational in the band and there are no plans to introduce such systems;

j) that the frequency band 76-77 GHz is already designated for long range automotive radars (vehicular and infrastructure radar systems) (ECC DEC(02)01 on Road Transport and Traffic Telematic Systems. Sharing studies conducted by the automotive industry have concluded that sharing is not achievable between Ultra Wide Band Short Range and Long Range Automotive Radars;

k) that the 79 GHz band should be made available on a European basis for SRR equipment as soon as possible and not later than January 2005 in order to provide an incentive for industry to place SRR products on the market using this frequency range;

l) that SRR-equipment is not considered as a safety of life service in accordance with the Radio Regulations, therefore SRR must operate on a non-interference and non-protected basis in accordance with the Radio Regulations;

DECIDES

1. that for the purpose of this Decision, SRR equipment are defined as applications providing road vehicle based radar functions for collision mitigation and traffic safety applications;

2. that the 79 GHz frequency range (77-81 GHz) is designated for Short Range Radar (SRR) equipment on a non-interference and non-protected basis with a maximum mean power density of -3 dBm/MHz e.i.r.p. associated with an peak limit of 55 dBm e.i.r.p.;

3. that the maximum mean power density outside a vehicle resulting from the operation of one SRR equipment shall not exceed -9 dBm/MHz e.i.r.p.;

4. that the 79 GHz frequency range (77-81 GHz) should be made available as soon as possible and not later than January 2005;

5. that this Decision will enter into force on 19 March 2004;

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."

Note:
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.