



Electronic Communications Committee (ECC)  
within the European Conference of Postal and Telecommunications Administrations (CEPT)

**GUIDANCE FOR 24 GHz SHORT RANGE RADAR (SRR) ENFORCEMENT**

**Paris, October 2006**

**0 EXECUTIVE SUMMARY**

Automotive short range radar equipment<sup>1</sup>, providing vehicle radar functions for collision mitigation and traffic safety applications, has been identified in the European Commission *e*-safety initiative as an important technology that could improve road safety.

To meet the requirement for a permanent, long term solution for short range radars, the ECC identified the frequency band 77-81 GHz in Decision ECC/DEC(04)03. Also, in order to facilitate an early introduction of SRR applications in Europe, the ECC prepared another decision (ECC/DEC(04)10) that allows the use of the 24 GHz frequency as this particular frequency range provides for immediate cost effective solutions for the automotive industry.

Compatibility with the Radio Astronomy Service within the frequency band 22.21-24 GHz has been shown as not being possible and thus specific measures to protect Radio Astronomy stations in Europe are to be implemented. The Decision facilitates the creation of exclusion zones around radio astronomy sites as defined and notified by CEPT countries. Within these zones the use of SRR equipment is not permitted under the Regulations. The decision mandates the automatic deactivation of SRR equipment within these exclusion zones after 30 June 2007. Until this date devices using manual deactivation will be permitted in order to facilitate the rapid introduction of SRR devices on to the market. The assessment of interference from SRR equipment to radio astronomy services has been studied and a guideline, describing a common set of criteria has been developed in Annex 1.

In addition in order to protect EESS and fixed services from possible harmful interference the Decision also mandates that the use of the 24 GHz band will be time limited as well as limited by the penetration rate of installed SRR equipment. After 2013 or if a penetration of 7 % has been reached, cars shall not be fitted with 24 GHz SRR equipment any more. This will be difficult to enforce, since it will be hard to find out when 7 % penetration has been reached. Also, stopping the 24 GHz equipment to be installed after its time is over will not be achieved easily on the basis of the R&TTE Directive 1999/05/EC. After analysis of the available options, it is suggested that the Automotive Directive or equivalent national legislation be used instead.

A key role of CEPT WGRA/RA1 is foreseen in the exchange of information related to enforcement activities.

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<sup>1</sup> Short range radar equipment, providing vehicle radar functions for collision mitigation and traffic safety applications

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## **1 INTRODUCTION**

The European Commission has determined that short-range radar (SRR) is a key component of the Community's e-safety initiative.

A permanent frequency band at 77-81 GHz (the '79 GHz range band') will be made available as soon as possible for SRR on the basis of ECC/DEC/(04)03 which has been adopted by the ECC at its March 2004 meeting. The Commission therefore adopted Decision 2004/545/EC of 8 July 2004 on the harmonisation of radio spectrum in the 79 GHz range band for the use of automotive short-range radar.

In addition, as a temporary solution, ECC identified the frequency band at 21.65-26.65 GHz (the 24 GHz band), which would enable the early introduction of automotive short-range radar to meet the objectives of the e-Safety initiative. As a consequence, the 24 GHz frequency range frequency band for SRR equipment should be made available by 1st July 2005. In order to allow early introduction of SRR applications in Europe the frequency band in the '24 GHz range' should be used on a temporary basis with limited number of equipment in the market place in Europe for a limited time frame. The implementation of such temporary solution requires agreement and commitment in some cases with legal certainty from CEPT Administrations, the European Commission (Radio Spectrum Committee and the TCAM) and the automotive industry.

It shall be taken as a clear incitement for manufacturers to develop SRR in the 79 GHz range. The temporary solution is limited in time, at the latest until the reference date that is set to 1st July 2013. After this reference date all new SRR equipment placed on the market shall use the 79 GHz band or alternative permitted technical solution, but the installed 24 GHz SRR devices can still be used until the end of the lifetime of the vehicles.

## **2 RELEVANT DOCUMENTS**

The following documents are the basis for the temporary solution in the 24 GHz frequency range:

- [1] ECC/DEC/(04)10: ECC Decision of 12 November 2004 on the frequency bands to be designated for the temporary introduction of Automotive Short Range Radars (SRR)
- [2] 2005/50/EC: Commission Decision of Jan 17th, 2005, on the harmonisation of the 24 GHz range radio spectrum band for the time-limited use by automotive short-range radar equipment in the Community
- [3] Memorandum of Understanding – Relating to the Implementation of Active Safety Automotive Short Range Radar
- [4] Explanatory Memorandum to the Commission Decision on the harmonisation of the 24 GHz radio spectrum range for the time-limited use by automotive short-range radar equipment in the Community
- [5] ETSI EN 302 088, part 1 & 2, Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices; Road Transport and Traffic Telematics (RTTT); Short range radar equipment operating in the 24 GHz
- [6] Directive 1999/5/EC of the European parliament and of the council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity (Directive R&TTE)
- [7] ECC Report 23 Compatibility of automotive collision warning Short Range Radar operating at 24 GHz with FS, EESS and Radio Astronomy

### 3 PURPOSE OF THE 24 SRR ENFORCEMENT GUIDANCE

The purpose of this report is to provide guidance for a common approach to a harmonized enforcement for 24 GHz SRR in case of interference and to provide proposals regarding enforcement in order to prevent:

- Placing on the market of 24 GHz SRR after the cut off date or when the maximum penetration rate (7%) will have been reached and,
- Placing on the market of 24 GHz SRR fitted vehicles, not fulfilling the essential requirements of R&TTE Directive.

It is recognised that there are differences from country to country in their national legislations and that surveillance and enforcement is under the responsibility of the national regulatory authorities. Therefore, full harmonisation on all aspects of enforcement within the CEPT is maybe not achievable. In order to at least gain maximum possible synergy, an exchange of information on 24 GHz SRR interference cases will be established via CEPT/WGRA/RA1. In addition, it has to be noted, that the Commission Decision describes in an Annex the information required for monitoring the use of the 24 GHz range radio spectrum band by SRR.

The following questions have been identified by Enforcement Authorities:

1. What are the criteria for the assessment of radio interference cases caused by 24 GHz SRR devices on the Radio Astronomy service?
2. How to prevent the placing on the market of new vehicles fitted with 24 GHz SRR devices after the date at which these devices will not be allowed to be placed on the market (cut off date or when the maximum penetration rate will have been reached)?
3. What are the procedures in special case of vehicles fitted with 24 GHz SRR not fulfilling the essential requirements of R&TTE Directive?

#### **3.1 What are the criteria for the assessment of radio interference cases caused by 24 GHz SRR devices on the Radio Astronomy service?**

In individual cases 24 GHz SRR can cause interference to the radio astronomy service. The elimination of such interference cases becomes particularly difficult. In order to resolve such individual interference cases to the best interests of both parties involved, it is considered useful to have a set of common criteria to assess such cases of radio interference. CEPT administrations are encouraged to use these criteria as a guideline for eliminating individual interference cases.

It is recommended that when examining cases of interference complaints, caused by 24 GHz SRR, Administrations or National Enforcement Authorities should consider the use of the framework described in annex 1 as a guideline for the process of resolving these interference cases in a transparent, proportionate and non-discriminatory way. Furthermore, it is recommended that all cases of regular and identifiable interference complaints should be notified to the ECC/WGRA/RA1.

#### **3.2 How to prevent the placing on the market of new vehicles fitted with 24 GHz SRR devices, after the date at which these devices will not be allowed to be placed on the market (cut-off date or when the maximum penetration rate will have been reached)**

Based on the relevant documents identified in chapter 2, although the R&TTE Directive does not necessarily make the placing on the market of new vehicles fitted with 24 GHz SRR devices illegal after the cut-off date or when the maximum penetration rate will have been reached, use of these devices newly placed on the market after the cut off date, will not be allowed in order to protect EESS and fixed services from possible harmful interference. The maximum penetration rate has to be considered on a national basis. As a consequence national radio interface regulations should be amended accordingly in order to avoid future placing on the market of new vehicles fitted with 24 GHz SRR devices. Furthermore, EC will withdraw the Harmonized Standard at the cut-off date. After this date it doesn't appear any more on the list of the harmonized standards published in the Official Journal (OJ.EU). However, a replacement of SRR devices in vehicles placed on the market with SRR devices before the cut-off date is still permitted.

Enforcement authorities should react and take actions against vehicle manufacturers, if they continue to place new vehicles fitted with SRR on the market after the cut-off date or when the maximum penetration rate will have been reached. Enforcement authorities should also inform ECC/WGRA/RA1 and the respective national authorities for the automotive market surveillance about their actions such as a safeguard clause procedure according art. 9.5 of the R&TTE Directive.

### **3.3 What are the procedures in special case of vehicles fitted with 24 GHz SRR not fulfilling the essential requirements of R&TTE Directive?**

If a vehicle fitted with 24 GHz SRR devices, which does not fulfil the essential requirements of the R&TTE Directive (e.g. no automatic deactivation mechanism after 1st July 2007 or installation requirements), then that device is not compliant and action against its placing on the market should be taken. A safeguard clause procedure, according article 9.1 of the R&TTE Directive should be initiated.

Enforcement authorities should verify the availability on time and the compliance of new foreseen SRR equipment features (relevant deactivation mechanism and new vertical emission mask limits).

## **4 OBSERVATIONS**

1. The moment the maximum penetration rate or the cut-off date is reached could result in enforcement problems in several member states. For example, the efficiency of the reporting system on the number of registered vehicles equipped with 24 GHz SRR devices is doubtful. RA11 noted that the interim solution is not clearly covered in the scope of the R&TTE Directive. We will have a "country by country" solution (national safeguard procedures) and problems will occur due to the principle of free circulation of goods on the common market. Therefore, a decision of the EC is required, although the enforcement authorities are aware that the EC is actually working on an amendment to the Automotive Directive. This amendment aims to quantify the number of vehicles with 24 GHz Short Range Radar equipment registered in each country and to prohibit their placing on the market after 30 June 2013 at the latest.
2. There may be difficulties in applying the R&TTE Directive to prevent placing on the market of vehicles fitted with 24GHz SRR devices after the cut off date and when the maximum penetration rate has been reached as noted above, Therefore the Automotive Directive, or equivalent national legislation, is likely to be a more appropriate mechanism for such control.

## ANNEX 1

**GUIDELINES FOR THE ASSESSMENT OF RADIO INTERFERENCE CASES  
CAUSED BY DISTURBING RADIATIONS**

When examining cases of interference complaints, caused by 24 GHz SRR devices, CEPT Administrations or National Enforcement Authorities should consider the use of the framework described in this annex as a guideline for the process of resolving these interference cases in a transparent, proportionate and non-discriminatory way.

