

UPDATE ON THE IMPLEMENTATION PROCESS OF AUTOMOTIVE SHORT RANGE RADARS AROUND 24 GHZ IN EUROPE

This document provides an update on the implementation process of automotive Short Range Radars in the frequency band 23.6 – 24 GHz in Europe. Results of the recent meeting of the Frequency Management Group of the CEPT are reported.

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1 INTRODUCTION

During CGMS meetings XXX and XXXI several documents were presented by ESA, NOAA, and EUMETSAT reporting on plans to implement automotive Short Range Radars (SRR) in the frequency band 23.6- 24 GHz and the potential impact to passive sensor measurements in this band. This document gives an update on the situation in Europe.

As reported at the last meeting the European administrations have recognised that SRR sharing with other services in the band 23.6 – 24 GHz is only feasible up to a certain level of market penetration. Discussions were focused on the allowed penetration rate and the possible end date of usage. It was concluded that the final SRR application should be around 77 GHz and regulatory provisions were made for SRR in this band.

2 LATEST DEVELOPMENTS IN THE EUROPEAN LICENSING PROCESS

Pushed by the automotive industry organised in SARA and supported by a mandate of the European Commission the Frequency Management Working Group (WGFM) of CEPT has worked at its meeting end April 2004 on an interim solution for the use of automotive Short Range Radar (SRR) applications in the 24 GHz band, violating an Earth Exploration Satellite Service (passive) frequency band which will also be used by an instrument planned on METOP satellites.

The European Earth Observation community (ESA, CNES and EUMETNET) and WMO were participating at the Conference to represent/defend their interests against those of the automotive industry.

After three years of extensive discussions the conclusion of a report to the European Commission and a corresponding ECC-Decision was expected, providing a possible solution for the introduction of SRRs in the 24-GHz range for an interim period.

At this WGFM meeting the following cornerstones for the interim use of the 24-GHz range by SRRs were determined:

- the maximum penetration levels for SRR is fixed to 5.9%,
- the reference date when no new SRR shall be introduced is fixed to 2012,
- an automatic deactivation function shall be introduced for all vehicles equipped with SRR from the beginning of their introduction,

- the center frequency 24.125 GHz shall be used for the UWB as well as the narrow band component of the system,
- a review process of the Radio Spectrum Committee (RSCoM) of the EU in 2009 to consider and confirm that the number of equipment in use on a national basis is still consistent with the agreed solution. This review is not intended to relax the penetration rate or to extend the reference date.

This framework for the interim introduction of SRRs at 24 GHz constitutes a compromise reached from the positions of the administrations who have outspoken their position at this meeting, taking into account the view of EUMETSAT, WMO, ESA, CNES and EUMETNET. Administrations clearly in support of the position of the scientific community (5.9%, reference date 2010 and automatic switch-off) were Austria, Sweden, Norway, Finland and France. The proponents of SRRs, the SARA-Group and Germany requested 8.3%, a reference date of 2014 and only a manual switch-off. Ireland, Denmark, UK and the Netherlands took a position between to the ones mentioned above. Russia and Italy raised other concerns related to their national situations.

From the composition of the positions expressed, it was possible to agree to set the penetration rate to 5.9% as required for the protection of the EESS (passive). As a compromise the 1 January 2012 as a final date for the introduction of new SRRs at 24 GHz had to be accepted.

Accepting the interim introduction of SRRs at 24 GHz for a limited timeframe and penetration this compromise framework at this meeting should enable the undisturbed use of the 24-GHz band by the passive services in this period and therefore is acceptable to the scientific community.

Germany, however, driven by SARA claimed that under those conditions an interim introduction of SRRs at 24 GHz would not at all be possible. Germany placed a strong reservation on the adoption of the Draft Report to the EC and the Draft ECC-Decision. According to the rules of procedure of the CEPT, those documents will have to be dealt with by the ECC itself.

Furthermore, it has to be expected that Germany will try to jeopardise the conclusions of WGFM as expressed in the Draft Report to the EC and the Draft ECC-Decision not only at the ECC but also at the RSCoM (EU) where these cornerstones are supposed to be used as the framework for the European harmonised regulations for the interim use of the 24-GHz range by SRRs.

3 SUMMARY

The licensing process of SRRs in Europe has not been completed. Several administrations have expressed their concerns. CEPT has agreed that SRRs shall be operated in frequency bands around 77 GHz.

An interim solution was discussed and is now proposed to ECC. This interim solution would only allow up to 5.9% of all new cars equipped with SRR. Furthermore no new cars with SRR equipment operating around 24 GHz would be allowed after 1 January 2012.

This regulation would be in accordance with sharing studies performed by ESA, EUMETNET, EUMETSAT, and CNES. No harmful interference to passive sensors would be expected. Nevertheless, it has to be noted that such licensing would set precedence in such a way that active service operations would be allowed in a band, which is protected by footnote 5.340 in the ITU Radio Regulations. This footnote states that “no emissions are allowed in this band”.