



ECC Decision (09)01

Harmonised use of the 63-64 GHz frequency band for
Intelligent Transport Systems (ITS)¹

Approved 13 March 2009

Amended 04 March 2016

¹ Comparable technical specifications to those given in this ECC Decision are given in the amended Commission Decision 2006/771/EC. EU Member States and, if so approved by the EEA Joint Committee, Iceland, Liechtenstein and Norway are obliged to implement the Commission Decisions.

EXPLANATORY MEMORANDUM

1 INTRODUCTION

This CEPT/ECC Decision addresses frequency designation within the band 63-64 GHz for the harmonised implementation of Intelligent Transport Systems (ITS). This frequency band is allocated to the Fixed Service, the Mobile Service, the Inter-Satellite Service and to the Radiolocation Service on a primary basis in ITU Region 1.

The objective of a frequency designation for ITS traffic safety and traffic efficiency applications in the 63-64 GHz band is to support the European Union eSafety initiative with its goals to reduce the number of road fatalities and improving the efficiency of road traffic with Intelligent Vehicle Safety Systems. ITS traffic safety and traffic efficiency systems in Europe have been developed within the 6th Framework programme of the European Union. The intelligent car has been a flagship initiative of the i2010 policy of the European Union.

ITS traffic safety and traffic efficiency communication includes both Inter Vehicle Communication (IVC) and related infrastructure to vehicle communication in highly dynamic ad hoc networks. In order to support the time critical traffic safety applications where fast information exchange is necessary to warn and to support the driver without time delay both IVC and infrastructure to vehicle communication, all ITS station types may be involved.

To support a quick development and deployment of ITS systems within a trans-European road network, it is essential that common frequency bands and associated harmonised equipment standards are available throughout Europe.

The CEPT/ECC compatibility studies for ITS at 63-64 GHz in ECC Report 113 conclude that

- ITS needs to implement mitigation techniques such as a guard band in their operating band in order to reduce the impact of the unwanted emissions from FS system close to 64 GHz;
- If the unwanted emissions from ITS are limited to -29dBm e.i.r.p. in the first 200 MHz of the FS band no problems are expected;
- No problems are expected with regard to compatibility with the Inter-Satellite Service;
- No military usage was reported however, one administration reported that this band is used for radiodetermination systems. This should be considered on a national basis in countries where radiolocation systems are operated (in particular to calculate the separation distances).

It is essential for the implementation and deployment of ITS traffic safety and traffic efficiency applications in the CEPT countries and thus the possibility to meet the general European Union policies on road safety that a European harmonised solution on spectrum availability is adopted within the CEPT/ECC providing the necessary regulatory certainty for the ITS industry.

This ECC Decision making spectrum available for ITS within the band 63-64 GHz based on compatibility studies developed within the CEPT/ECC ensures that future radio services or radio applications in this frequency band will have to prove their compatibility with ITS as well as with other existing radio services and radio applications in the band.

2 BACKGROUND

The frequency band 63-64 GHz has been identified by ETSI within the system reference document TR 102 400 as a frequency band for development and deployment of ITS providing traffic safety and traffic efficiency applications all over Europe.

The Intelligent Transport Systems (ITS) technology is an important enabler for European objectives to achieve increasing traffic safety, traffic and transport efficiency and a lower rate of emissions according to the European Commission implementing Decision EC(2014)4995 of 22 July 2014 on “amending Implementing Decision C(2013)8631 adopting the 2014-2015 work programme in the framework of the Specific Programme Implementing Horizon 2020 – The Framework Programme for Research and Innovation (2014-2020)”. A frequency spectrum allocation is one of the key enablers for ITS services. The Electronic Communications Committee of the European Conference of Postal and Telecommunications Administrations (CEPT/ECC) has established frequency allocations for the 5.9 GHz band (ECC Decision (08)01 and ECC Recommendation (08)01 and the 63-64 GHz (ECC Decision (09)01).

EU and national projects have shown that the characteristics of the 63 GHz and 5.9 GHz band can complement each other.

ITS applications operating in the 63-64 GHz range which are under this ECC Decision are also covered by the EC Decision for short range devices (2006/771/EC and its amendments) with identical usage parameters. This ECC Decision recognises ITS applications as under the mobile service and the 63-64 GHz entry was therefore removed in 2012 from Annex 5 of ERC Recommendation 70-03. At the same time, the ECC Decision (02)01 originally identifying the 63-64 GHz frequency band for Road Traffic and Transport Telematics (RTTT) was withdrawn. The existing Harmonised Standard ETSI EN 302 686 (currently under revision) also includes rail vehicles in the scope. Real ITS implementations in the market for 63-64 GHz ITS equipment are expected to occur in the future with first indications of available radio chipsets and development of traffic efficiency solutions. There is no benefit seen in restricting the ITS application in 63-64 GHz to only road traffic applications. The set of technical usage conditions applies to vehicle-to-vehicle, vehicle-to-infrastructure and infrastructure-to-vehicle systems in the fields of transport (e.g. road and rail). Typical applications may also be used for interfaces between different modes of transport.

The 63-64 GHz band requires real-line-of-sight communication at a short distance up to 100 metres and high data rate transmission capability in combination with a very high level of security and beamforming. The 63-64 GHz band provides possibilities to exchange a large amount of raw sensor data at a short distance, which is essential for life threatening situations as well as time extending aspects like (closer distance driving) such as C-ACC and Platooning. Applications such as C-ACC (cooperative adaptive cruise control) and Platooning require both the 5855-5925 MHz and 63-64 GHz bands to achieve reasonable level of performance with sufficient system redundancy. In the 1990s, C-ITS research shows that the 63 GHz band has benefits for cooperative applications, but due to the lack of feasible semiconductor technologies, systems have not been implemented for the specific use in this band.

In the Horizon 2020 work program for 2016-2017, the European Commission is encouraged by stakeholders to further develop the 63-64 GHz band. Calls for 63 GHz related EU projects within this work programme in 2016 are envisioned.

3 REQUIREMENT FOR AN ECC DECISION

The allocation or designation of frequency bands for use by a service or system under specified conditions in CEPT administrations is laid down by law, regulation or administrative action. ECC Decisions are required to deal with radio spectrum related matters and the carriage and use of equipment throughout Europe.

The harmonisation on a European basis supports the Directive 2014/53/EU of the European Parliament and of the Council of 16 April 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC. A commitment by CEPT administrations to implement an ECC Decision will provide a clear indication that the required frequency bands will be made available on time and on a European-wide basis.

ECC DECISION OF 13 MARCH 2009 ON THE HARMONISED USE OF THE 63-64 GHz FREQUENCY BAND FOR INTELLIGENT TRANSPORT SYSTEMS (ITS) (ECC/DEC/(09)01) AMENDED 04 MARCH 2016

“The European Conference of Postal and Telecommunications Administrations,

considering

- a) that there is an industry requirement for designation of frequency spectrum within the band 63-64 GHz for harmonised implementation and deployment of Intelligent Transport Systems (ITS);
- b) that the deployment of ITS in Europe would support the European Union e-Safety initiative with the goals to reduce road fatalities and improve the efficiency of road traffic and the i2010 policy of the European Union;
- c) that the frequency band 63-64 GHz is allocated to the Mobile Service, the Fixed Service, the Radiolocation Service and to the Inter-Satellite Service on a primary basis in the European Common Allocation table (ERC Report 25);
- d) that ITS applications providing communication to and from mobile units are considered as an application in the Mobile Service and that frequency spectrum should be designated to ITS as to any other Mobile Service application based on the agreed compatibility conditions;
- e) that investigations confirm that data exchange in the 63-64 GHz band supports ITS applications such as real-time sensor exchange, platooning, high precision positioning, hybrid radar and vehicle communications systems, ultra-low latency applications like automatic co-operative braking, inter coach/wagon communication in rail systems, and automatic driving support;
- f) that ECC Report 113 on ‘*Compatibility studies around 63 GHz between ITS and other systems*’ provides the results of compatibility studies between the ITS and other services/systems within the band 63-64 GHz as well as requirements to protect other services/systems above 64 GHz;
- g) that the main conclusions of the compatibility study performed by the CEPT/ECC indicate that within the frequency band 63-64 GHz, ITS applications will not suffer from excessive interference resulting from other services/systems and ITS in this band is compatible with all other services.
- h) that ITS devices cannot claim protection from radiolocation systems in the frequency band 63-64 GHz;
- i) that ITS applications may be developed and deployed in Europe based on the conditions described in the ECC Report 113;
- j) that standardisation of radio equipment and communication protocols to ensure cross-border interoperability for various applications envisaged is ongoing within ETSI, which has developed EN 302 686, and other international standardisation organisations;
- k) that in the EU/EEA-EFTA countries the radio equipment that is under the scope of this Decision shall comply with the R&TTE Directive. Conformity with the essential requirements of the R&TTE Directive may be demonstrated by compliance with the applicable harmonised European standard(s) or by using the other conformity assessment procedures set out in the R&TTE Directive

DECIDES

1. that the purpose of this Decision is to harmonise the use of the 63-64 GHz frequency band for Intelligent Transport Systems (ITS);
2. that for the purpose of this Decision, Intelligent Transport Systems (ITS) mean those applications whose aim is to reduce the number of traffic fatalities and improving the efficiency of traffic using inter vehicle or infrastructure to vehicle communications including hybrid radar and vehicle communications systems;
3. that CEPT **administrations shall** designate the frequency band 63-64 GHz for ITS applications;
4. that the maximum radiated power (e.i.r.p.) for ITS stations should be limited to 40 dBm e.i.r.p.;
5. that CEPT **administrations shall** permit free circulation and use of ITS equipment;
6. that CEPT **administrations shall** exempt ITS equipment falling under this Decision from individual licensing;
7. that this ECC Decision **enters into force** on 04 March 2016;
8. that the preferred **date for implementation** of this ECC Decision shall be 05 September 2016;
9. 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 documentation database <http://www.ecodocdb.dk> for the up to date position on the implementation of this and other ECC Decisions.