EUROPEAN COMMISSION
Information Society and Media Directorate-General

Electronic Communications Policy
Radio Spectrum Policy

Brussels, 29 March 2012
DG INFSO/B4

RSCOM12-04

ECC(12)INFO02

ADOPTED

RADIO SPECTRUM COMMITTEE

Opinion of the RSC pursuant to Advisory Procedure under Article 4 of Regulation 182/2011/EU and Article 4.2 of Radio Spectrum Decision 676/2002/EC

Subject: **Fifth Mandate to CEPT on ultra-wideband technology to clarify the technical parameters in view of a potential update of Commission Decision 2007/131/EC**

This is a Committee working document which does not necessarily reflect the official position of the Commission. No inferences should be drawn from this document as to the precise form or content of future measures to be submitted by the Commission. The Commission accepts no responsibility or liability whatsoever with regard to any information or data referred to in this document

Information Society and Media

European Commission, DG Information Society and Media, 200 Rue de la Loi, B-1049 Bruxelles
RSC Secretariat, Avenue de Beaulieu 33, B-1160 Brussels - Belgium - Office BU33 7/09
Telephone: direct line (+32-2)299.66.11 / 295.26.65 switchboard (+32-2)299.11.11. Fax: (+32-2) 296.83.95
E-mail : infso-rsc@ec.europa.eu

Fifth Mandate to CEPT
on ultra-wideband technology to clarify the technical parameters
in view of a potential update of Commission Decision 2007/131/EC

1. Purpose

The objective of this mandate is to ensure a consistent application of technical parameters related to ultra-wide band (UWB) technology within the internal market. Any resulting decision should maximise the efficient use of spectrum and safeguard economies of scale for emerging equipment using UWB technology, taking into account ECC Decision (06)04, as amended in December 2011, and standardisation activities within ETSI.

In order to ensure internal market benefits for new UWB equipment, including but not limited to equipment used in road and rail vehicle applications, a coherent and consistent regulatory environment is warranted. In this regard, it is necessary to clarify the technical parameters as defined in the recently amended ECC Decision (06)04 and to differentiate transparently between those parameters essential for inclusion in a further amendment of Commission Decision 2007/131/EC[1] on ultra-wideband (UWB) technology and the technical parameters to be taken into account in the development of Harmonised Standards.

2. Justification

Pursuant to Article 4 of the Radio Spectrum Decision the Commission may issue mandates to the CEPT for the development of technical implementing measures with a view to ensuring harmonised conditions for the availability and efficient use of radio spectrum; such mandates shall set the task to be performed and the timetable therefore.

Since the last Mandate on UWB (Mandate 4 of 2 October 2008) new opportunities to implement UWB technology, in particular for road, rail and airborne applications, have emerged and corresponding technical requirements have been developed by CEPT. In order to ensure a coherent and consistent regulatory environment with regard to the technical parameters and requirements on ultra-wideband usage within the internal market, it is necessary that any update of Commission Decision 2007/131/EC be based on clarity and transparency with regard to the technical parameters and ensure that appropriate information on mitigation techniques is available for inclusion in an appropriate manner into the ETSI Harmonised Standards.

[1] Commission Decision of 21 February 2007 on allowing the use of the radio spectrum for equipment using ultra-wideband technology in a harmonised manner in the Community, as amended by Decision 2009/343/EC of 21 April 2009.

Information Society and Media

European Commission, DG Information Society and Media, 200 Rue de la Loi, B-1049 Bruxelles
RSC Secretariat, Avenue de Beaulieu 33, B-1160 Brussels - Belgium - Office BU33 7/09
Telephone: direct line (+32-2)299.66.11 / 295.26.65 switchboard (+32-2)299.11.11. Fax: (+32-2) 296.83.95
E-mail : infso-rsc@ec.europa.eu

Ensuring consistency in particular requires a clarification of the difference, if any, between "exterior limit" for road and rail vehicle applications and the generic limits for maximum e.i.r.p. densities radiated into the air, in particular in regard to relationship between the required mitigation techniques for specific applications and the permitted limits for maximum e.i.r.p. densities.

In addition more information is needed in regard to the inclusion of this and other technical parameters as the Low Duty Cycle (LDC) mitigation technique and other mitigation techniques.

3. Main EU policy objectives

With this mandate the Commission seeks to obtain relevant technical information with the objective of contributing to the improvement of efficient use of spectrum, resulting in positive economic and social benefits in the internal market. The EU policy objectives include:

- To establish transparent regulatory conditions for the benefit of industry;

- To create an open and competitive internal market under harmonised technical conditions, which provides opportunities for using new technologies and applications;

- To create an effective internal market for applications using ultra-wideband technology with a view to enable the benefits of economies of scale and socio-economic benefits for citizen and business.

4. Task order and schedule

Through this mandate, the CEPT is requested:

1) To validate the technical requirements as collated in the tables attached in annex and to provide clear definition for the mitigation techniques referenced in the footnotes, in view of ensuring an appropriate inclusion of such techniques in the relevant Harmonised Standards.

2) To clarify the definition of the term "exterior limit" in particular in regard to the difference if any between "exterior limit" for road and rail vehicle applications and applicable generic limits for maximum e.i.r.p. densities radiated into the air, as harmonised in Commission Decision 2007/131/EC as amended.

3) To ensure a streamlined and transparent internal market framework for ultra-wideband technology, by clarifying:

   - Which mitigation techniques in each frequency range lead to what deviation from the generally applicable technical conditions for generic UWB usage;

   - How the generic limits for maximum e.i.r.p. densities radiated into the air relate to attenuation factors that apply to the usage of specific UWB equipment or the use of UWB technology in other applications. This includes also those types of UWB

equipment for which frequency access is harmonised through other Commission Decisions such as -but not limited to- those in Commission Decision 2006/771/EC.

- Which, if any, further technical conditions need to be included in the annex of the Commission Decision on UWB and to provide justifications why the inclusion of relevant technical parameters in Harmonised Standards is not sufficient.

CEPT is mandated to provide deliverables according to the following schedule:

Delivery date	**Deliverable**
March 2013	For RSC#43 Draft final report, subject to public consultation
July 2013	Final report delivery

In implementing this mandate, the CEPT shall, where relevant, take the utmost account of Community law applicable and support the principles of technological neutrality, non-discrimination and proportionality insofar as technically possible.

The Commission, with the assistance of the Radio Spectrum Committee pursuant to the Radio Spectrum Decision, may consider applying the results of this mandate in the EU, pursuant to Article 4 of the Radio Spectrum Decision.

***

Annex

GENERAL CASE

frequency range	**technical requirements**		**comments**
	Maximum mean e.i.r.p. Spectral density	Maximum peak e.i.r.p (defined in 50 MHz)	
Below 1.6 GHz	-90 dBm/MHz	-50 dBm	
1.6 to 2.7 GHz	-85 dBm/MHz	-45 dBm	
2.7 to 3.1 GHz	-70 dBm/MHz	-36 dBm	
3.1 to 3.4 GHz	-70 dBm/MHz or -41.3 dBm/MHz using LDC[1] or -41.3 dBm/MHz using DAA[2]	-36 dBm or 0 dBm or 0 dBm	
3.4 to 3.8 GHz	-80 dBm/MHz or -41.3 dBm/MHz using LDC[1] or -41.3 dBm/MHz using DAA[2]	-40 dBm or 0 dBm or 0 dBm	
3.8 to 4.8 GHz	-70 dBm/MHz or -41.3 dBm/MHz using LDC[1] or -41.3 dBm/MHz using DAA[2]	-30 dBm or 0 dBm or 0 dBm	
4.8 to 6 GHz	-70 dBm/MHz	-30 dBm	
6 to 8.5 GHz	-41.3 dBm/MHz	0 dBm	
8.5 to 9 GHz	-65 dBm/MHz or -41.3 dBm/MHz using DAA[2]	-25 dBm or 0 dBm	
9 to 10.6 GHz	-65 dBm/MHz	-25 dBm	
Above 10.6 GHz	-85 dBm/MHz	-45 dBm	

[1] [to be included: definition of the mitigation technique]

[2] [to be included: definition of the mitigation technique]

UWB DEVICES INSTALLED IN ROAD AND RAIL VEHICLES

frequency range	**technical requirements**		**comments**
	Maximum mean e.i.r.p. Spectral density	Maximum peak e.i.r.p (defined in 50 MHz)	
Below 1.6 GHz	-90 dBm/MHz	-50 dBm	
1.6 to 2.7 GHz	-85 dBm/MHz	-45 dBm	
2.7 to 3.1 GHz	-70 dBm/MHz	-36 dBm	
3.1 to 3.4 GHz	-70 dBm/MHz or -41.3 dBm/MHz using LDC[1] + e.l.[4] or -41.3 dBm/MHz using TPC[3] + e.l.[4] +DAA[2]	-36 dBm or 0 dBm or 0 dBm	
3.4 to 3.8 GHz	-80 dBm/MHz or -41.3 dBm/MHz using LDC[1]+e.l[4] or -41.3 dBm/MHz using TPC[3] + e.l[4]+DAA[2]	-40 dBm or 0 dBm or 0 dBm	
3.8 to 4.8 GHz	-70 dBm/MHz or -41.3 dBm/MHz using LDC[1]+e.l[4] or -41.3 dBm/MHz using TPC[3] + e.l[4].+DAA[2]	-30 dBm or 0 dBm or 0 dBm	
4.8 to 6 GHz	-70 dBm/MHz	-30 dBm	
6 to 8.5 GHz	-53.3 dBm/MHz or -41.3 dBm/MHz using LDC[1]+e.l.[4] or -41.3 dBm/MHz using TPC[3]+e.l.[4]	-13.3 dBm or 0 dBm or 0 dBm	
8.5 to 9 GHz	-65 dBm/MHz or -41.3 dBm/MHz using TPC[3] + e.l.[4]+DAA[2]	-25 dBm or 0 dBm	
9 to 10.6 GHz	-65 dBm/MHz	-25 dBm	
Above 10.6 GHz	-85 dBm/MHz	-45 dBm	

[1] [to be included: definition of the mitigation technique]

[2] [to be included: definition of the mitigation technique]

[3] [to be included: definition of the mitigation technique]

[4] [to be included: definition on"exterior limit", if necessary]