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Working Document

Subject: Mandate to CEPT to harmonise radio spectrum use for Ultra-wideband Systems in the European Union



Information Society

Rue de la Loi 200, B-1049 Bruxelles/Wetstraat 200, B-1049 Brussel - Belgium - Office: BU33 4/47.

Telephone: direct line (+32-2)295.94.66., switchboard 299.11.11. Fax: +32.2.296.83.95.

e-mail : info-rsc@cec.eu.int

MANDATE TO CEPT TO HARMONISE RADIO SPECTRUM USE FOR ULTRA-WIDEBAND SYSTEMS IN THE EUROPEAN UNION

Title

A mandate to CEPT to identify the conditions relating to the harmonised introduction in the European Union of radio applications based on ultra-wideband (UWB) technology.

Purpose

Pursuant to art. 4 of the Radio Spectrum Decision, CEPT is mandated to undertake all necessary work to identify the most appropriate technical and operational criteria for the harmonised introduction of UWB-based applications in the European Union.

Justification

UWB technology may provide a host of applications of benefit for various EU policies. However, its characteristic broad underlay over spectrum already used by other radio services may also have an impact on the proper operation of radio services of significance for the successful implementation of EU policies. It is therefore important to establish conditions of the use of radio spectrum for UWB which will allow UWB to be introduced on the market as commercial opportunities arise, while providing adequate protection to other radio services.

Furthermore, economies of scale and consequent benefits to the consumer will only accrue if an effective single market for these applications is set in place by harmonising spectrum usage rules across the EU. This approach will also address the fact that the expected mobility of UWB devices would likely render the enforcement of divergent national regulations impracticable.

Considering the potential impact of UWB regulation on a high number of EU policies and initiatives, this Commission mandate aims to ensure that the technical work already underway or planned by CEPT will fulfil EU policy requirements, as well as to formally align spectrum access harmonisation activities with standardisation work being carried out by ETSI in response to Commission Mandate M/329.

Order and Schedule

1. CEPT is hereby mandated to undertake all relevant work to identify harmonised conditions of use of radio spectrum for ultra-wideband applications in the European Union. A high degree of consideration shall be given to the interests of all parties involved, including the existing services in the bands which could be employed for ultra-wideband applications. At the same time, this must be balanced with the overall requirement of avoiding undue regulatory delays in the development and introduction in the European Union of new technologies, such as UWB.

To do so, the technical feasibility of coexistence of UWB applications with existing and planned radio services shall be explored in detail. The near-totality of UWB applications

are expected to be operated without requirement for an individual right to use radio spectrum (“licence-exempted”) and on a “no protection, no harmful interference” basis. In order to compute “safe” operating parameters for UWB in the European Union, future individual and aggregation effects of UWB devices should be fully considered and operational mitigation techniques explored.

At the same time, usage and power level constraints proposed in the light of all the possible factors affecting the degree of harmful interference from UWB to other services ought to remain proportionate, taking into account that many sources of radio “white noise” already exist, in particular in indoor environments.

CEPT should also undertake this mandate in full awareness of the developing regulatory context for UWB outside Europe and of the potential benefits to consumers of achieving globally-compatible conditions of radio spectrum use for UWB. However, the protection of other radio users should be ensured, by considering the European specificities in spectrum use compared to other regions of the world.

This mandate is intended to provide a general framework for the development of a common European position on UWB, and to consider all possible UWB types of applications (i.e. communications, imaging, surveillance, etc.), except automotive short-range radar, for which a separate Commission mandate has already been issued to CEPT (see RSCOM 03-37).

In scheduling the work, CEPT is requested to take into account the state of progress in the development of UWB standards and the fact that sharing studies have been focussed until now on communication applications operating between 1 and 6 GHz. It is therefore expected that under this Mandate CEPT will finalise its activities in this area and in this range at first, while addressing other possibilities, both concerning other applications and other frequency ranges. Depending on developments of UWB technology, more mandates may be required subsequently.

2. In order to achieve the above, CEPT is mandated to:

- undertake all the necessary technical compatibility work between UWB systems and potentially affected radio services required to develop a harmonised regulation for the use of radio spectrum for UWB in the European Union; including
 - scheduling and prioritising activities under this mandate to reflect the work already undertaken in this area; justifying this selection on the basis of clear criteria, notably industry demand and potential impact of UWB applications on EU policies;
 - determining the frequency range(s) it wishes to focus upon first, and justifying this selection on the basis of clear criteria; studying the possible use of additional frequency ranges in the future;
- identify the technical parameters of UWB systems to be included in the overall harmonised regulatory approach; for this, work in close collaboration with ETSI, in its development of harmonised standards for UWB pursuant to Commission Mandate M/329; in this context, consider where design guidelines for existing

and new radio standards could improve suitability of spectrum for underlay by UWB devices;

- identify the conditions of use of radio spectrum by UWB required to protect other radio services from harmful interference¹, including the potential impact of UWB out-of-band emissions on other services. Give due consideration to appropriate measurements techniques for UWB emission, as well as to the use of mitigation techniques compliant with the application of EC law;
- consider the existing and developing regulatory environment, in particular on-going ITU activities, and the extent of convergence which is feasible with non-EU regulation. The application across the EU of ITU RR article 4.4, but also the implications of UWB emissions in frequency bands covered by ITU RR footnote 5.340, should also be studied;
- report on actual or planned real-life testing within the European Union; consider the possible benefits of experimental rights to use radio spectrum (or licences) for UWB applications²;
- consider the designation of one or more harmonised frequency band(s) for generic or specific UWB uses; the choice of particular technical conditions of use applicable to UWB in this/these band(s) shall be duly justified. Alternatively, technical “options” shall be provided for discussion and approval by the Radio Spectrum Committee.
- consider what could be the possible elements of a monitoring and review mechanism aimed at ensuring that regulation of radio spectrum for UWB remains responsive to technical and societal developments, and to actual or perceived changes in the risk of harmful interference with other radio services.

CEPT is expected to summarise the results on the above-mentioned tasks in its reporting to the Commission.

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

Delivery date	Deliverable	Subject
July 15 th 2004	First Report from CEPT to the Commission	Description of initial work undertaken under this Mandate and schedule for future work.
Nov 15 th 2004	Interim Report from CEPT to the Commission	Description of first phase of work finalised under this Mandate and

¹ As defined in ITU RR 1.169

² In this and other relevant areas of the Mandate, the Commission will encourage CEPT to make use of on-going activities and know-how of EU RTD projects on UWB.

		orientation for second phase.
April 2005	Final Report from CEPT to the Commission	Description of work undertaken and results achieved under this Mandate. Suggestions for further work.

In addition, CEPT is requested to report on the progress of its work pursuant to this Mandate to all the meetings of the Radio Spectrum Committee taking place during the course of the Mandate.

4. The result of this Mandate can be made applicable in the European Community pursuant to Article 4 of the Radio Spectrum Decision².

In implementing this Mandate, the CEPT shall, where relevant, take the utmost account of Community law applicable.

² Decision 676/2002/EC of the European Parliament and of the Council of 7 March 2002 on a regulatory framework for radio spectrum policy in the European Community, OJ L 108 of 24.4.2002, p.1.