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Single Market, regulatory environment, Industries under vertical legislation  
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**M/305 EN**

**STANDARDISATION MANDATE ADDRESSED TO CEN, CENELEC AND ETSI  
IN THE FIELD OF ELECTROTECHNOLOGY, INFORMATION  
TECHNOLOGY AND TELECOMMUNICATIONS**

**Title**

Harmonised standards covering protection from electromagnetic fields (0 Hz to 300 GHz) generated by apparatus included in the scope of either the Low Voltage Directive 73/23/EEC<sup>1</sup>, (LVD) or the Radio Equipment and Telecommunications Terminal Equipment (R&TTE) Directive 1999/5/EC<sup>2</sup>.

**Purpose**

Drafting of European Standards defining the requirements to protect human beings from hazardous effects, which may be caused by exposure to electromagnetic fields, emitted by electrical apparatus. The standards must relate to the apparatus as the LVD and the R&TTE Directive relates to apparatus. The standards are intended to become harmonised standards giving a presumption of conformity to articles 2 of Directive 73/23/EEC and articles 3.1.a of 1999/5/EC.

**1. INTRODUCTION**

During a number of years there has been ongoing research in the field of determining the influence of exposure of human body to electromagnetic fields and efforts to establish reproducible and reliable measurement and calculation methods for the physical quantities describing the electromagnetic field.

Electrical apparatus mainly creates the electromagnetic fields. A majority of these apparatus falls under the scope of the Directives 73/23/EEC, the Low Voltage Directive and 1999/5/EC, the R&TTE Directive.

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<sup>1</sup> Council Directive 73/23/EEC of 19 February 1973 on the harmonization of the laws of Member States relating to electrical equipment designed for use within certain voltage limits (Official Journal L 77 of 26 March 1973) as amended.

<sup>2</sup> Council Directive 99/5/EC of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity (Official Journal L 91 of 7 April 1999).

Risks, caused by these phenomena are covered by the Low Voltage Directive (see justification below). The R&TTE Directive extends the applicability of the safety objectives and requirements of the LVD to equipment, which is in its scope but not in the scope of the LVD. It further enables a single conformity assessment for all requirements.

In July 1999 a Council Recommendation 1999/519/EC<sup>3</sup> on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz) was adopted.

The present mandate is an update of the previously issued mandate M/032 and takes into account the change of directive for Telecommunication Terminal Equipment from 91/263/EEC to the Radio Equipment & Telecommunications Terminal Equipment Directive 99/5/EC. The scope of the mandate is broader and now covers the products covered by the Directive 73/23/EEC.

## 2. JUSTIFICATION

### 2.1. Legal Basis

This standardisation mandate falls within the framework of the Low Voltage Directive and the R&TTE Directive and refers to products covered by these directives, as defined in article 1 of the LVD and article 2 of the R&TTE Directive.

Article 2 of Directive 73/23/EEC stipulates that the Member States take all appropriate measures to ensure that electrical equipment may be placed on the market only if, having been constructed in accordance with good engineering practice in safety matters in force in the Community, it does not endanger the safety of persons, domestic animals or property when properly installed and maintained and used in applications for which it was made.

The principal elements of the safety objectives are listed in Annex I of Directive 73/23/EEC. In this case clause 2b is applicable:

*Measures of a technical nature should be prescribed in accordance with point 1 (of Annex I of Directive 73/23/EEC), in order to ensure that temperatures, arcs or radiation which would cause a danger, are not produced.*

Article 3 of Directive 1999/5/EC stipulates that the following essential requirements are applicable to all apparatus:

*(a) the protection of the health and the safety of the user and any other person, including the objectives with respect to safety requirements contained in Directive 73/23/EEC, but with no voltage limit applying.*

In the preamble of Recommendation 1999/519/EC it is stated that whereas

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<sup>3</sup> Council Recommendation 1999/519/EC of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz) (Official Journal L 197 of 30 July 1999).

*“(12) In order to assess compliance with the basic restrictions provided in this recommendation, the national and European bodies for standardisation (e.g. CENELEC, CEN) should be encouraged to develop standards within the framework of Community legislation for the purposes of the design and testing of equipment;”*

## **2.2. Status of the original mandate**

Under the first version of this mandate (M/032<sup>4</sup>) CEN, CENELEC and ETSI were entrusted to develop standards covering the so-called thermal effects of radiocommunications equipment operating in the most commonly used frequency ranges, notably including the frequency ranges used by GSM. In addition to M/032 the 3 bodies were entrusted with a programming mandate to assess the need to develop harmonised standards covering other effects (M/033<sup>5</sup>). Progress of work under these mandates has not been satisfactory.

The present mandate confirms the need for harmonised standards as requested by M/032 for the effects referred to in Council Recommendation 1999/519/EC and the dangers referred to in Directive 73/23/EEC and incorporates the objectives of M/033, which hereby is withdrawn.

## **3. DESCRIPTION OF THE MANDATE**

The European Commission requests CEN, CENELEC and ETSI to prepare and adopt the harmonised standards covering the aspects of emission of electromagnetic fields from 0 Hz to 300 GHz emitted by equipment covered by Directives 1999/5/EC and 73/23/EEC.

Harmonised standards should describe the test methods, test equipment and calculation methods needed in order to specify product requirements, limiting the emission of EMF. They should take into account the reference levels and basic restrictions in Council recommendation 1999/519/EC to allow presumption of conformity to article 2 of Directive 73/23/EEC and article 3.1 (a) of 1999/5/EC, taking due account of the international standardisation and current technical practice in this sector.

Council Recommendation 1999/519/EC specifies limit values for exposure to electromagnetic fields that can be produced by several apparatus. The CEN/CENELEC Resolution “Standardization policy in the area covered by article 118a of the EU Treaty” underlines that the right to set such limit values for occupational exposure must be reserved for the political decision-making process. The compliance of a product with the emission limits given in the harmonised standards asked for in this mandate, will ensure that the measured EMF exposure of

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<sup>4</sup> Mandate M/032, Safety requirements for mobile communication equipment; Thermal aspects of EMR of 11. October 1993. Other references are BC-T-302, SOGT 93/18 Rev.4 and SOGITS N° 682 Rev. 4

<sup>5</sup> Mandate M/033, Work programme for safety requirements on athermal effects for mobile communication equipment exposing humans to EMR of 12 October 1993. Other references are BC-T-303, SOGT 93/19 Rev.3 and SOGITS N° 683 Rev. 3

the human body originating from this apparatus, will not under normal use exceed the limits given in the Council recommendation.

In all matters relating to the health aspects and biological effects of electromagnetic fields, the standard bodies should seek the advice of ICNIRP and relevant services of the European Commission.

All relevant interested parties at regional and international level should contribute to the execution of the mandate.

In order to provide a comprehensive solution, the package of standard shall consist of:

- **Basic and Generic standards**, containing assessment methods (measurement and calculation procedures) for EMF emission and defining limits in accordance with the values provided in Council Recommendation 1999/519/EC.

If necessary they shall also describe the test equipment to be used.

In case of emission from sources with multiple frequencies, the calculation of reference levels using the formulae's in Annex IV of 1999/519/EC shall be used.

In certain situations, where the emission from the products is highly localised on the human body, the use of generic measurement standards may not be appropriate. In such cases respect of the basic restriction should be addressed directly in product standards or product family standards. This shall be explained in the generic standards.

In case of products likely to emit very weak EMF, a description of simpler and less accurate measurement methods and/or measurement equipment can be made, providing the uncertainties by using such equipment or measurement method are fully taken into account.

- **Product – or product-family standards**, applying the applicable tests from the basic and generic standards to specific products or product groups, and specifying specific measuring and calculation methods and limits where appropriate, in accordance with the normal condition of use.

In case of products likely to emit very weak EMF, a description of simpler and less accurate measurement methods and/or measurement equipment can be made, providing the uncertainties by using such equipment or measurement method are fully taken into account.

Standards must also address the issue of providing all necessary information to accompany the products with regard to safe use (also if special precautions is needed during repair/maintenance).

#### **4. EXECUTION OF THE MANDATE**

##### **4.1. Designation of the mandate**

The Commission hereby entrusts to CEN, CENELEC and ETSI the described mandate.

## **4.2. Starting phase**

In order to ensure transparency in the work to be carried out, CEN, CENELEC and ETSI will provide by the end March 2001 with the following information:

- A programme with the standards that will cover the mandate and the target dates for public enquiry and for adoption.
- An indication of aspects to be modified and/or supplemented.

As a matter of urgency CEN, CENELEC and ETSI shall complete the harmonised standard covering mobile GSM handsets, covered by the original mandate by December 2000.

## **4.3. Implementation of the programme**

CEN, CENELEC and ETSI shall implement the submitted programme.

## **4.4. Progress reports**

The formal cooperation between CENELEC and the Commission is ensured through the normal procedures in the Directive 98/34/EC Committee.

CEN, CENELEC and ETSI are at regular intervals to inform the Commission, which in turn will inform the Directive 98/34/EC Committee and where it concerns equipment within the scope of the R&TTE Directive its standing Committee (TCAM), of any new draft standard which might be covered by this mandate, together with the characteristics of the standard as referred to above.

## **4.5. Transposition of standards**

The European standards adopted are to be transposed into national standards and the conflicting national standards are to be withdrawn from the catalogues of the national standards organisations of Member States before the date of withdrawal specified in the relevant harmonised standards. In this context it should be mentioned that the R&TTE Directive does not request transposition of standards into national standards in order to give a presumption of conformity with its essential requirements.

## **4.6. International co-operation**

It goes without saying that CEN, CENELEC and ETSI must co-operate with ICNIRP<sup>6</sup> to ensure that the standards on measurement and testing are properly aligned with the Council Recommendation 1999/519/EC and avoid any duplication of work. EMF standards are of international and interregional interest. CEN, CENELEC and ETSI are therefore also advised to co-ordinate their activities with the other international standardisation bodies concerned.

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<sup>6</sup> The International Commission on Non Ionizing Radiation Protection.

#### **4.7. Standstill**

Accepting the standardisation programme by the European standards bodies will open the standstill period referred to in Article 7 of the Directive 98/34/EC<sup>7</sup>

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<sup>7</sup> Council Directive 98/34/EC of 22 June 1998, laying down a procedure for the provision of information in the field of technical standards and regulations (Official Journal L 204 of 21.07.98) (former Directive 83/189/EEC).