SLOVENSKI STANDARD
SIST EN 50400:2006/A1:2014

01-februar-2014

Osnovni standard za prikaz skladnosti stacionarne opreme za radijski prenos (110 MHz–40 GHz), namenjene za uporabo v brezžičnih telekomunikacijskih omrežjih z osnovnimi ali izvedenimi mejnimi vrednostmi v povezavi z izpostavljenostjo prebivalstva elektromagnetnim sevanjem - Dopolnilo A1

Basic standard to demonstrate the compliance of fixed equipment for radio transmission (110 MHz - 40 GHz) intended for use in wireless telecommunication networks with the basic restrictions or the reference levels related to general public exposure to radio frequency electromagnetic fields, when put into service

Grundnorm zum Nachweis der Übereinstimmung von stationären Einrichtungen für Funkübertragungen (110 MHz bis 40 GHz), die zur Verwendung in schnurlosen Telekommunikationsnetzen vorgesehen sind, bei ihrer Inbetriebnahme mit den Basisgrenzwerten oder den Referenzwerten bezüglich der Exposition der Allgemeinbevölkerung gegenüber hochfrequenten elektromagnetischen Feldern

Norme de base pour démontrer la conformité des équipements fixes de transmission radio (110 MHz - 40 GHz) destinés à une utilisation dans les réseaux de communication sans fil, aux restrictions de base ou aux niveaux de référence relatives à l'exposition des personnes aux champs électromagnétiques de fréquence radio, lors de leur mise en service

Ta slovenski standard je istoveten z: **EN 50400:2006/A1:2012**

ICS:

17.220.20	Merjenje električnih in magnetnih veličin	Measurement of electrical and magnetic quantities
33.070.01	Mobilni servisi na splošno	Mobile services in general

SIST EN 50400:2006/A1:2014 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 50400/A1

October 2012

ICS 17.220.20; 33.070.01

English version

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This amendment A1 modifies the European Standard EN 50400:2006; it was approved by CENELEC on 2012-08-29. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This amendment exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Ref. No. EN 50400:2006/A1:2012 E

Foreword

This document (EN 50400:2006/A1:2012) has been prepared by CLC/TC 106X, “Electromagnetic fields in the human environment”.

The following dates are fixed:

- latest date by which the amendment has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2013-08-29
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2015-08-29

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN and CENELEC shall not be held responsible for identifying any or all such patent rights.

2 Normative references

Replace

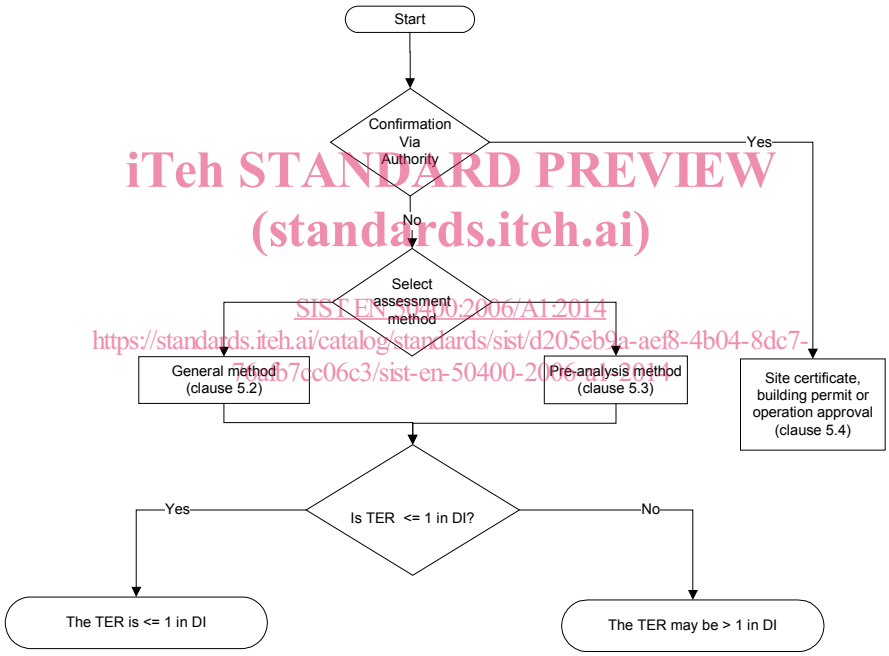
ISO "*Guide to the expression of uncertainty in measurement*", Ed.1 1995

by

ISO/IEC Guide 98-3:2008, *Uncertainty of measurement – Part 3: Guide to the expression of uncertainty in measurement (GUM:1995)*

5 General process

In 5.1, **replace** Figure 1 by:



After 5.3, **add** the following new subclause:

5.4 Confirmation by authority

In countries in which the objective of this standard is embedded in a regulatory procedure for site certification, building permit or operation approval, e.g. in Germany, Italy or Switzerland the obligations of this procedure shall be followed.

NOTE As examples, the regulatory procedures in Germany, Italy and Switzerland are described in Annexes F, G and H.

Annexes

Add the following new Annexes F, G and H:

Annex F
(informative)

Site certification in Germany

Since 1 July 1992, site certification has been required in Germany with a view to limiting the electromagnetic fields from fixed transmitters in the frequency range 9 kHz to 3 GHz.

A radio transmitter or a site with several transmitters is subject to site certification when

- the equivalent isotropic radiation power of the transmitter or the sum of all the transmitters installed on the site is equal to or higher than 10 W, and
- operation of the transmitter/s as intended is on a fixed basis.

Applications for a site certificate for equipment to be used in frequencies of 30 MHz or over may only use the application forms published in the official journal of the Regulatory Authority for Telecommunications and Post. Where only frequencies below 30 MHz are used, application for the site certificate may be made without the official forms.

The application shall only be deemed valid if all the necessary documentation is submitted to the Federal Network Agency. Duplicate copies of the following must be enclosed with the application:

1. a site plan (local maps, excerpts from the local development or zoning plan), showing the land and buildings adjacent to the site where the radio equipment in question is to be operated;
2. if the transmitting antenna is to be mounted on a structure, a building plan or sketch of the structure with dimensions (side view and top view), showing the mounting position of the radio equipment;
3. diagrams of the antenna to be used.

Upon issue of the site certificate, the Federal Network Agency determines, either by calculation or measurement in accordance with German standard DIN VDE 0848 Part 1 (issued August 2000), on the basis of the system-based safety distance, the site-specific safety distance necessary to comply with the limit values:

a) the limit values laid down in the currently valid version of the Order on electromagnetic fields (26th Order implementing the Federal Law for the protection against emissions) [German designation: 26.BImSchV] and,

b) provided the Federal Law for the protection against emissions or an Order based thereon does not stipulate otherwise, the reference levels in Table 2 of Annex III to Council Recommendation 1999/519/EC [1)], and

c) in addition, within the 9 kHz to 50 MHz frequency range, the limit values for active implants in accordance with draft standard DIN VDE 0848-3-1/A1 (issued February 2001).

The Federal Network Agency takes also into account the relevant field strengths of the surrounding fixed radio equipment (site-specific factors of the surrounding area).

The procedure and the application forms are available on the Homepage of the Federal Network Agency: http://emf.bundesnetzagentur.de.

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1) *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), OJ L 199, 30/07/1999, p. 59-70*

Annex G
(informative)

EMF regulation in Italy

Since 2001, in Italy, a specific law on electromagnetic fields exposure has defined the competencies to be dealt with at State, regional and local level in relation to network deployment procedures: according to this law, the State has the power to regulate environmental matters, and to define exposure limits which must be the same on the whole country.

In 2003, a specific Decree (DPCM 8th July 2003) has set, only for fixed telecommunication sites, more restrictive exposure limits than those defined by the Council Recommendation 1999/519/EC , while limits are in line with the Council Recommendation for personal devices (including other fixed devices such as wireless routers) and other RF sources.

In 2003, another Decree (the “Code of Electronic Communications”, Decree no. 259/2003) has provided a general framework for fixed telecommunication sites authorization procedures. According to the Code, a specific authorization from the Municipality is required for base stations, and also to change the radio parameters of an existing base station.

Each application for building a new base station or for changing the radio parameters of an existing one, has to include a specific document (“EMF pre-compliance analysis”), which must include all the RF parameters including transmitted power, radiation patterns, main beam direction and tilt for each transmitting antenna, on-site measurements of the existing electromagnetic fields levels, and calculated electromagnetic fields levels expected after that the base station is switched on (including measurement results).

Both the DPCM 8th July 2003 and the Decree n. 259/2003 refer to the National Electrotechnical Committee (CEI, Comitato Elettrotecnico Italiano) documents as a legal basis for EMF measurement and calculation methods.

The Municipality pronunciation is based on an “environmental advice” sought for each application by the competent Regional Environmental Protection Agency (Agenzia Regionale per la Protezione dell’Ambiente, ARPA), which is the legally responsible entity for the monitoring of environmental electromagnetic field levels.

Simplified authorization procedures, although based on the same electromagnetic fields exposure limits, have been defined for sites where the power to the antenna is less than 20 W, and for co-locating new radio equipments on existing sites (in order to facilitate site-sharing among operators): in these cases, the EMF pre-compliance analysis is not required, but there is still the obligation to transmit all the radio parameters to the Municipality and to the Regional Environmental Protection Agency.

References

CEI 211-7 Guideline: “Guide for the measurement and evaluation of electromagnetic fields in the frequency range 10 kHz – 300 GHz, with reference to the human exposure” (2001)

CEI 211-10 Guideline: “Guidance for carrying out a Base Station complying with limits for human exposure to high frequency electromagnetic field” (2002)

CEI 211-10; V1 “Appendix G: Evaluation of the software for the calculation of electromagnetic field levels – Appendix H: Methodologies of measurement for UMTS signals” (2004)

Annex H
(informative)

EMF regulation in Switzerland

In 2000, the Swiss government has put into force the ordinance relating to protection from non-ionising radiation (ONIR) in the frequency range from 0 Hz to 300 GHz. It applies to stationary sources, e.g. high voltage power lines, radio transmitters and radar stations. The legal framework is laid down in the Swiss federal law relating to the protection of the environment.

The ONIR enforces the reference levels for the general population as recommended by ICNIRP (1998). These exposure limit values must be respected at all places accessible to the general public.

Additionally, the ONIR defines precautionary limit values, the so-called installation limit values, for places of sensitive use. Places of sensitive use are rooms in buildings that are regularly occupied by persons for prolonged time, public or private children's playgrounds designated in spatial planning legislation and those areas of undeveloped sites on which sensitive use is permitted. Installation limit values are defined according to technical and operational feasibility and economic acceptability.

Within the area of wireless technologies, installation limit values have been fixed for stationary radio transmitting installations radiating for more than 800 h per year with a radiated equivalent power of more than 6 W. These limit values are expressed in units of the electric field strength and limit the radiation due to one individual installation. They apply to a so-called reference operating mode that is characterized by maximum data traffic at maximum transmission power. They are substantially lower than the ICNIRP reference levels.

The owner of such an installation has to submit a site data sheet to the authorities when the installation is built, moved to another site or modified. These undertakings usually require an authorization by the local authority that may be preceded by a public consultation. The site data sheet shall contain:

a) the current and planned technical and operational data of the installation, insofar as these are relevant to the generation of radiation;

b) the reference operating mode;

c) data on the radiation generated by the installations at the points accessible to persons where the radiation is most intense, at the three places of sensitive use where the radiation is most intense and at all places of sensitive use where the installation limit value is exceeded.

If the radiation of the installation at a place of sensitive use reaches more than 80 % of the installation limit value according to numerical simulation, the authority generally decrees an approval measurement once the installation has been put into service. The measurement results have to be extrapolated from the current operating conditions to the reference operating mode.

Operators of cellular mobile phone networks additionally have to implement a quality assurance system, in order to guarantee at all times that their antennas comply with the authorized parameters relevant for radiation emission, specifically the transmitting power and the direction of the antenna beam. The quality assurance system has to be periodically certified by an external accredited certification body.

References

Ordinance relating to Protection from Non-Ionising Radiation of December 1999 (as of 1 September 2009)

Enforcement recommendations to the ONIR and measurement recommendations for mobile phone base stations and broadcast radio transmitters in German, French and Italian are available on the website of the Swiss Federal Office for the Environment FOEN: http://www.bafu.admin.ch .