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STN	**Environmentálne inžinierstvo (EE). Uzemnenie a pospájanie zariadení IKT napájaných jednosmerným napätím 48 V v telekomunikačných a dátových centrách.**	**STN EN 300 253 V2.2.1** 87 0253

Environmental Engineering (EE); Earthing and bonding of ICT equipment powered by -48 VDC in telecom and data centres

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ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
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Contents

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Foreword

This European Standard (EN) has been produced by ETSI Technical Committee Environmental Engineering (EE).

The present document has been produced within the framework of the following considerations:

a) ICT equipment is generally installed in telecommunication or data centres and held in racks, cabinets or other mechanical structures;

b) the existing Recommendation ITU-Ts and CENELEC standards in such matters do not ensure the required standardization at the equipment level;

c) network operators and equipment providers agreed to standardize on a bonding configuration that facilitates:

- compliance with functional requirements including Electromagnetic Compatibility (EMC) aspects of emission and immunity;
- compatible building and equipment provisions;
- installation of new telecommunication or data centres as well as expansion or replacement of installations in existing telecommunication or data centres with equipment coming from different suppliers;
- a structured installation practice;
- simple maintenance rules;
- contracting on a common basis;
- cost effectiveness in development, manufacturing, installation and operation.

National transposition dates	
Date of adoption of this EN:	26 May 2015
Date of latest announcement of this EN (doa):	31 August 2015
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	29 February 2016
Date of withdrawal of any conflicting National Standard (dow):	29 February 2016

Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the ETSI Drafting Rules (Verbal forms for the expression of provisions).

"**must**" and "**must not**" are **NOT** allowed in ETSI deliverables except when used in direct citation.

Introduction

The present document addresses earthing and bonding of ICT equipment in telecommunication or data centres in relation to safety, functional performance and EMC.

Information regarding the general principles on earthing for telecommunication or data centres has been published by the ITU-T in the handbook on "Earthing of telecommunication installations" [i.1]. Recommendation ITU-T K.27 [i.2] deals with bonding configurations and earthing inside a telecommunication building or data centre. One bonding configuration only is selected from Recommendation ITU-T K.27 [i.2] (CBN/MESH-BN) and tailored to the present document.

1 Scope

The present document applies to earthing and bonding of ICT equipment operating with DC voltage defined in ETSI EN 300 132-2 [i.9], in order to facilitate the installation, operation and maintenance of equipment.

It also co-ordinates with the pre-conditions of the installation to achieve the following targets:

- safety from electrical hazards;
- reliable signal reference;
- satisfactory Electromagnetic Compatibility (EMC) performance.

The specification of ICT equipment and of the pre-conditions of installation are subject to agreement of the parties (e.g. the supplier and the purchaser) and the procedure to achieve agreement is covered by annex A of the present document.

The present document does not cover safety and EMC aspects of the equipment. Those aspects are covered by other relevant standards.

The present document does not apply to the installation of ICT equipment in locations other than telecommunication and data centres, e.g. ICT equipment within a customer's building, including subscriber line termination.

NOTE: Earthing and bonding of equipment installed in locations other than telecommunication and data centres is covered by CENELEC EN 50310 [i.6].

2 References

2.1 Normative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the reference document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at http://docbox.etsi.org/Reference.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are necessary for the application of the present document.

[1] CENELEC HD 60364-4-41: "Low-voltage electrical installations - Part 4-41: Protection for safety - Protection against electric shock".

[2] CENELEC HD 60364-5-54: "Low-voltage electrical installations - Part 5-54: Selection and erection of electrical equipment - Earthing arrangements, protective conductors and protective bonding conductors".

[3] CENELEC EN 60950-1: "Information technology equipment - Safety - Part 1: General requirements".

[4] CENELEC EN 41003: "Particular safety requirements for equipment to be connected to telecommunication networks and/or a cable distribution system".

2.2 Informative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the reference document (including any amendments) applies.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

[i.1] ITU-T handbook: "Earthing of telecommunication installations".

[i.2] Recommendation ITU-T K.27 (1991): "Bonding Configurations and Earthing inside a Telecommunication Building".

[i.3] IEC 60050: "International Electrotechnical Vocabulary".

[i.4] IEC 60050-604: "International Electrotechnical Vocabulary. Chapter 604: Generation, transmission and distribution of electricity - Operation".

[i.5] IEC 60050-826: "International Electrotechnical Vocabulary. Electrical installations of buildings".

[i.6] CENELEC EN 50310: "Application of equipotential bonding and earthing in buildings with information technology equipment".

[i.7] CENELEC EN 62305 series: "Protection against lightning".

[i.8] IEC 60050-195: "International Electrotechnical Vocabulary. Electrical installations of buildings". Earthing and protection against electric shock.

[i.9] ETSI EN 300 132-2: "Environmental Engineering (EE); Power supply interface at the input to telecommunications and datacom (ICT) equipment; Part 2: Operated by -48 V direct current (dc)".

[i.10] CENELEC EN 50162: "Protection against corrosion by stray current from d.c. system".

[i.11] CENELEC HD 60364-1: "Electrical installation of buildings; Part 1: Scope, object and definitions".