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

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This standard includes the English version of the European Standard.

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EUROPEAN STANDARD

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

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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.

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| Date of withdrawal of any conflicting National Standard (dow): | 29 February 2016 |

Modal verbs terminology

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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.

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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.

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

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| [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.

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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".

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