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**Environmental Engineering (EE);
Earthing and bonding of 400 VDC data and
telecom (ICT) equipment**

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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) Datacommunications and Telecommunications (ICT) equipment is generally installed in data and telecom centres and held in racks, cabinets or other mechanical structures;
- b) the existing ITU-T and ITU-R Recommendations 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 data and telecom centres as well as expansion or replacement of installations in existing data and telecom 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:	30 September 2013
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Date of latest publication of new National Standard or endorsement of this EN (dop/e):	30 June 2014
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Introduction

The present document addresses earthing and bonding of data and telecom (ICT) equipment in data and telecom centres when implementing a direct current interface up to 400 VDC defined in EN 300 132-3-1 [1] in relation to safety, functional performance and EMC. The present standard may also be applicable for ICT equipment in other locations such as: street cabinets, containers, subscriber's buildings, BTSs, etc.

The general principles for electrical installations from a safety perspective are based on the HD 60364-series (IEC 60364-series) of standards, and where appropriate on information published by ITU-T to provide for the proper functioning of those installations.

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1 Scope

The present document applies to earthing and bonding of ICT equipment installed in data and telecom centres and similar installations operating within the normal service voltage range up to 400 VDC defined in EN 300 132-3-1 [1].

Earthing and bonding network of the building (CBN), the bonding network of the equipment (SRPP), and the interconnection between these two networks are treated in the present document. It contributes to the standardization of telecommunication and datacom equipment installation.

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

- safety from electrical hazards;
- continuity of service requiring:
 - reliable signal reference;
 - satisfactory Electromagnetic Compatibility (EMC) performance.

The present document defines earthing and bonding configuration down to the equipment level in order to facilitate the installation, operation and maintenance of data and telecom centres in data and telecom buildings or similar installations independent of the equipment supplier.

The specification of ICT equipment and of the pre-conditions of installation is subject to agreement of the parties (e.g. the supplier and the purchaser). Annex A can be used in the procedure to achieve an agreement.

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

The present document applies to the installation of ICT equipment in data and telecom centres. The present document may also be applicable for ICT equipment in other locations, e.g.:

- street cabinet;
- container;
- subscriber's building;
- BTS.

2 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 referenced 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.

2.1 Normative references

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

- [1] ETSI EN 300 132-3-1: "Environmental Engineering (EE); Power supply interface at the input to telecommunications and datacom (ICT) equipment; Part 3: Operated by rectified current source, alternating current source or direct current source up to 400 V; Sub-part 1: Direct current source up to 400 V".