SLOVENSKI STANDARD
oSIST prEN 50600-2-3:2013

01-oktober-2013

Informacijska tehnologija - Naprave in infrastruktura podatkovnega centra - 2-3. del: Nadzor okolja

Information technology - Data centre facilities and infrastructures -- Part 2-3: Environmental control

Informationstechnik - Einrichtungen und Infrastrukturen von Rechenzentren -- Teil 2-3: Überwachung der Umgebung

Technologie de l'information - Installation et infrastructures des centres de traitement de données -- Partie 2-3: Contrôle environnemental

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Ta slovenski standard je istoveten z: **prEN 50600-2-3:2013**

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ICS:

35.020	Informacijska tehnika in tehnologija na splošno	Information technology (IT) in general
35.110	Omreževanje	Networking
91.140.50	Sistemi za oskrbo z elektriko	Electricity supply systems

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2003-01.Slovenski inštitut za standardizacijo. Razmnoževanje celote ali delov tega standarda ni dovoljeno.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
prEN 50600-2-3

June 2013

ICS 35.020; 35.110; 35.160

English version

Information technology - Data centre facilities and infrastructures - Part 2-3: Environmental control

Technologie de l'information - Installation et infrastructures des centres de traitement de données - Partie 2-3: Contrôle environnemental

Informationstechnik - Einrichtungen und Infrastrukturen von Rechenzentren --Teil 2-3: Überwachung der Umgebung

This draft European Standard is submitted to CENELEC members for CENELEC enquiry.
Deadline for CENELEC: 2013-11-22.

It has been drawn up by CLC/TC 215.

If this draft becomes a European Standard, CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

This draft European Standard was established by CENELEC 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.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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CENELEC

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

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oSIST prEN 50600-2-3:2013

Contents

iTeh Standards
(https://standards.iteh.ai)
Document Preview
SIST EN 50600-2-3:2014
https://standards.iteh.ai/catalog/standards/sist/6ded7081-b61a-4994-a07f-831d304ed1b6/sist-en-50600-2-3-2014

oSIST prEN 50600-2-3:2013

35 **Figures**

37 **Tables**

40

iTeh Standards
(https://standards.iteh.ai)
Document Preview

SIST EN 50600-2-3:2014
https://standards.iteh.ai/catalog/standards/sist/6ded7081-b61a-4994-a07f-831d304ed1b6/sist-en-50600-2-3-2014

oSIST prEN 50600-2-3:2013

41 # Foreword

42 This document (prEN 50600-2-3:2013) has been prepared by CLC/TC 215 "Electrotechnical aspects of
43 telecommunication equipment".

44 This document is currently submitted to the Enquiry.

45 This document has been prepared under a mandate given to CENELEC by the European Commission and
46 the European Free Trade Association.

iTeh Standards
(https://standards.iteh.ai)
Document Preview

SIST EN 50600-2-3:2014
https://standards.iteh.ai/catalog/standards/sist/6ded7081-b61a-4994-a07f-831d304ed1b6/sist-en-50600-2-3-2014

oSIST prEN 50600-2-3:2013

Introduction

The unrestricted access to internet-based information demanded by the information society has led to an exponential growth of both internet traffic and the volume of stored/retrieved data. Data centres are housing and supporting the information technology and network telecommunications equipment for data processing, data storage and data transport. They are required both by network operators (delivering those services to customer premises) and by enterprises within those customer premises.

Data centres need to provide modular, scalable and flexible facilities and infrastructures to easily accommodate the rapidly changing requirements of the market. In addition, energy consumption of data centres has become critical both from an environmental point of view (reduction of carbon footprint) and with respect to economical considerations (cost of energy) for the data centre operator.

The implementation of data centres varies in terms of:

a) purpose (enterprise, co-location, co-hosting or network operator facilities);

b) security level;

c) physical size;

d) accommodation (mobile, temporary and permanent constructions).

The needs of data centres also vary in terms of availability of service, the provision of security and the objectives for energy efficiency. These needs and objectives influence the design of data centres in terms of building construction, power distribution, environmental control and physical security. Effective management and operational information is required to monitor achievement of the defined needs and objectives.

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This series of European Standards specifies requirements and recommendations to support the various parties involved in the design, planning, procurement, integration, installation, operation and maintenance of facilities and infrastructures within data centres. These parties include:

1) owners, facility managers, ICT managers, project managers, main contractors;

2) architects, building designers and builders, system and installation designers;

3) facility and infrastructure integrators, suppliers of equipment;

4) installers, maintainers.

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At the time of publication of this European Standard, EN 50600 series will comprise the following standards:

– EN 50600-1: Information technology – Data centre facilities and infrastructures – Part 1: General concepts;

– EN 50600-2-1: Information technology – Data centre facilities and infrastructures – Part 2-1: Building construction;

– EN 50600-2-2: Information technology – Data centre facilities and infrastructures – Part 2-2: Power distribution;

– EN 50600-2-3: Information technology – Data centre facilities and infrastructures – Part 2-3: Environmental control;

– EN 50600-2-4: Information technology – Data centre facilities and infrastructures – Part 2-4: Telecommunications cabling infrastructure;

– EN 50600-2-5: Information technology – Data centre facilities and infrastructures – Part 2-5: Security systems;

– EN 50600-2-6: Information technology – Data centre facilities and infrastructures – Part 2-6: Management and operational information.

The inter-relationship of the standards within the EN 50600 series is shown in Figure 1.

oSIST prEN 50600-2-3:2013

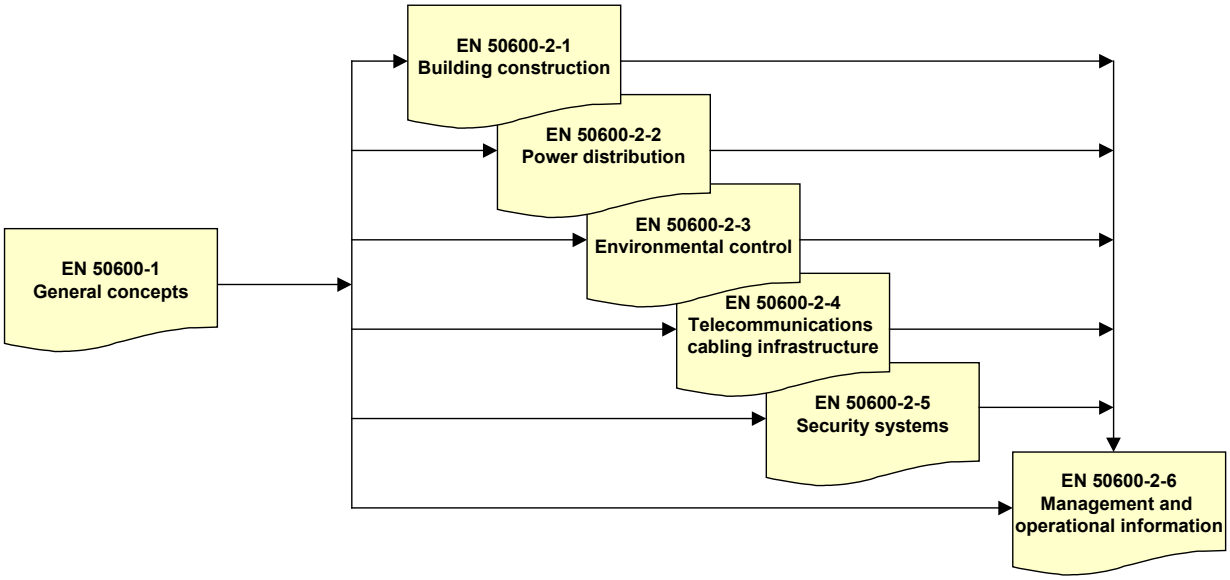

Figure 1 - Schematic relationship between the EN 50600 standards

EN 50600-2-X standards specify requirements and recommendations for particular facilities and infrastructures to support the relevant classification for “availability”, “physical security” and ‘energy efficiency enablement” selected from EN 50600-1.

This European Standard addresses the environmental control facilities and infrastructure within data centres together with the interfaces for monitoring the performance of those facilities and infrastructures in line with EN 50600-2-6 (in accordance with the requirements of EN 50600-1).

This European Standard is intended for use by and collaboration between architects, building designers and builders, system and installation designers.

NOTE The “intended for” text above needs to be reviewed and definitions need to be created for each of the “responsible persons”.

This series of European Standards does not address the selection of information technology and network telecommunications equipment, software and associated configuration issues.

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oSIST prEN 50600-2-3:2013

1 Scope and conformance

1.1 Scope

This European Standard addresses environmental control within data centres based upon the criteria and classifications for “availability”, “security” and “energy efficiency enablement” within EN 50600-1.

This European Standard specifies requirements and recommendations for the following:

a) temperature control
b) fluid movement control
c) humidity control
d) particulate control
e) vibration
f) floor layout and equipment locations
g) energy saving practices
h) physical security of environmental control systems

For issues related to electromagnetic environment see EN 50600-2-5.

1.2 Conformance

For a data centre to conform to this European Standard:

a) it shall feature an environmental control solution that meets the requirements of Clause 4 for each identified space, which is predicted to meet the relevant availability requirements of Clause 5 where the space has scalable requirements;

b) it shall feature an approach to physical security in relation to the environmental control solution that meets the requirements of Clause 6;

c) it shall feature an energy efficiency enablement solution that meets the requirements of the relevant Complexity Level of Clause 7;

d) local regulations, including safety, shall be met.

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2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 50600-1, *Information technology — Data centre facilities and infrastructures – Part 1: General concepts*

EN 50600-2-1[1]), *Information technology — Data centre facilities and infrastructures – Part 2-1: Building construction*

EN 50600-2-5,[2]) *Information technology — Data centre facilities and infrastructures – Part 2-5: Security systems*

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1) Approved for formal vote.

2) Under consideration.

oSIST prEN 50600-2-3:2013

3 Terms, definitions and abbreviations

3.1 Terms and definitions

For the purposes of this document, the terms and definitions in EN 50600-1 and the following apply:

3.1.1
adiabatic cooling
adiabatic cooling is a cooling system that is using the evaporative cooling principle to reduce the air temperature

3.1.2
absolute humidity
quantity of water vapour in a given volume of air, expressed by mass

3.1.3
access floor
system consisting of completely removable and interchangeable floor panels that are supported on adjustable pedestals, pedestals connected by stringers to allow access to the area beneath

Note 1 to entry: also known as raised floor

[SOURCE: prEN 50600-2-1:2012, 3.1.1]

3.1.4
dew point
temperature at which the water vapour in a gas begins to deposit as a liquid or ice, under standardized conditions

[SOURCE: IEC 60050-212:2010, 212-18-11]

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3.1.5
enthalpy
for any system, that is, the volume of substance under discussion, enthalpy is the sum of the internal energy of the system plus the system's volume multiplied by the pressure exerted by the system on its surroundings

SIST EN 50600-2-3:2014
https://standards.iteh.ai/catalog/standards/sist/6ded7081-b61a-4994-a07f-831d304ed1b6/sist-en-50600-2-3-2014

3.1.6
exhaust air temperature
the temperature of the air leaving the data centre building

3.1.7
free cooling
cooling system that uses the external ambient conditions to cool the data centre without using a refrigeration cycle (no compressor operation)

3.1.8
fresh air cooling
cooling system that uses the external air to cool the data centre either directly or indirectly

3.1.9
fresh air make up
form of air handler that "conditions" fresh air as it is continuously introduced into the data centre

Note 1 to entry: It is designed to remove moisture and a range of other airborne particulates that could in time erode the integrity and quality of the environment.

Note 2 to entry: Removal of the particulate matter results in a cleaner overall environment.