SLOVENSKI STANDARD
SIST EN 50600-4-1:2017

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Informacijska tehnologija - Naprave in infrastruktura podatkovnih centrov - 4-1. del: Pregled in splošne zahteve za bistvene kazalnike učinkovitosti

Information technology - Data centre facilities and infrastructures - Part 4-1: Overview of and general requirements for key performance indicators

Informationstechnik - Einrichtungen und Infrastrukturen von Rechenzentren - Teil 4-1: Überblick über und allgemeine Anforderungen an Leistungskennzahlen

Technologie de l'information - Installation et infrastructures de centres de traitement de données - Partie 4-1 : Vue d'ensemble et exigences générales relatives aux indicateurs-clés de performance

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Information technology - Data centre facilities and infrastructures - Part 4-1: Overview of and general requirements for key performance indicators

Technologie de l'information - Installation et infrastructures de centres de traitement de données - Partie 4-1 : Vue d'ensemble et exigences générales relatives aux indicateurs-clés de performance

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European foreword

This document (EN 50600-4-1:2016) has been prepared by CLC/TC 215 “Electrotechnical aspects of telecommunication equipment”.

The following dates are fixed:

· Latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	[2017-07-10]
· Latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	[2019-10-10]

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Regarding the various parts in the EN 50600 series, see the Introduction.

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 economic 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.

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, consultants, building designers and builders, system and installation designers;

3) facility and infrastructure integrators, suppliers of equipment;

4) installers, maintainers.

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

— 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 50600-3-1, *Information technology — Data centre facilities and infrastructures — Part 3-1: Management and operational information*;

— EN 50600-4-1, *Information technology — Data centre facilities and infrastructures — Part 4-1: Overview of and general requirements for key performance indicators*;

— EN 50600-4-2, *Information technology — Data centre facilities and infrastructures — Part 4-2: Power Usage Effectiveness*;

— EN 50600-4-3, *Information technology — Data centre facilities and infrastructures — Part 4-3: Renewable Energy Factor*;

— CLC/TR 50600-99-1, *Information technology — Data centre facilities and infrastructures — Part 99-1: Recommended practices for energy management*.

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

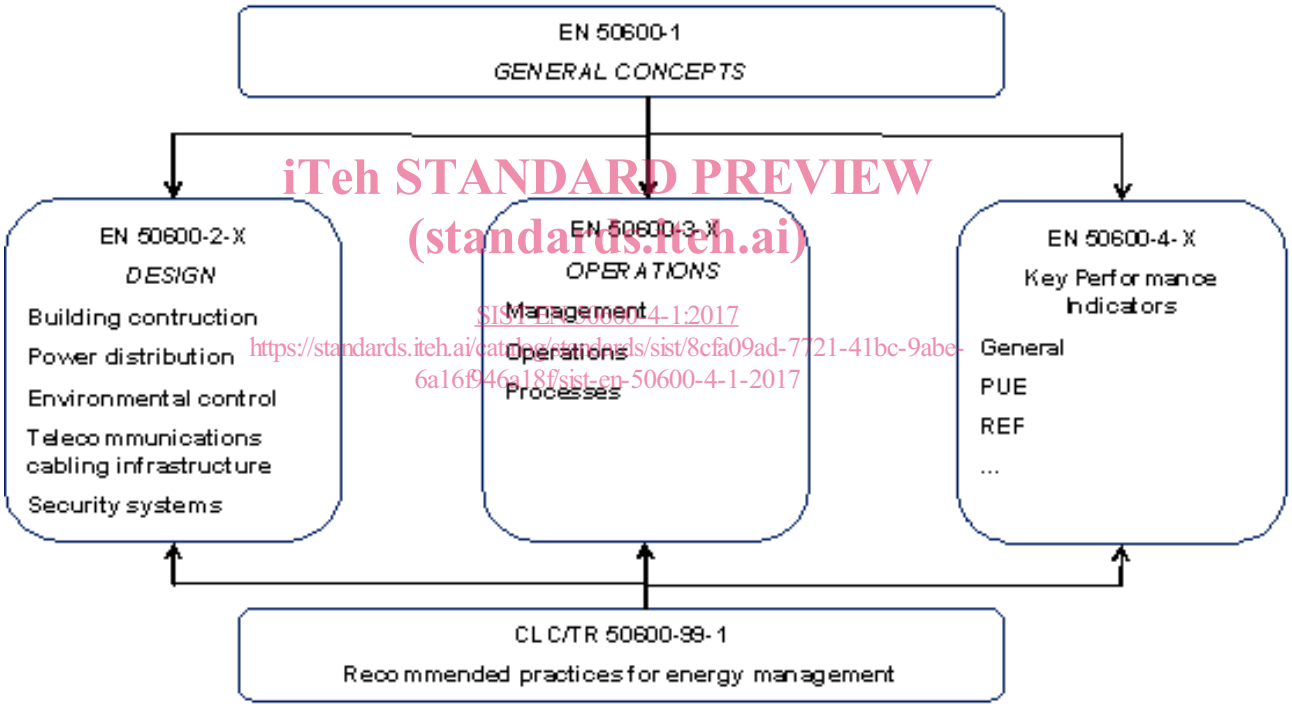

Figure 1 — Schematic relationship between the EN 50600 series of documents

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.

EN 50600-3-X documents specify requirements and recommendations for data centre operations, processes and management.

EN 50600-4-X documents specify requirements and recommendations for key performance indicators (KPIs) used to assess and improve the resource usage efficiency and effectiveness, respectively, of a data centre.

In today’s digital society data centre growth, and power consumption in particular, is an inevitable consequence and that growth will demand increasing power consumption despite the most stringent energy efficiency strategies. This makes the need for key performance indicators that cover the effective use of resources (including but not limited to energy) and the reduction of CO_2 emissions essential.

NOTE Within the EN 50600–4 series, the term “resource usage effectiveness” is more generally used for KPIs in preference to “resource usage efficiency”, which is restricted to situations where the input and output parameters used to define the KPI have the same units.

In order to enable the optimum resource effectiveness of data centres a suite of effective KPIs is needed to measure and report on resources consumed in order to develop an improvement roadmap.

These standards are intended to accelerate the provision of operational infrastructures with improved resource usage effectiveness.

This European Standard provides an overview of and defines general requirements for key performance indicators specified in the EN 50600-4 series. The common objective of the KPIs is the effective or efficient use of resources, for example:

- the minimization of energy and other resource (e.g. water) consumption;
- task effectiveness of the IT load (data processing, storage and transport) within the data centre, maximizing the IT output with the minimum energy consumption;
- energy reuse in the form of waste heat, if possible;
- the use of renewable energy, both generated on site and off site.

Additional standards in the EN 50600-4 series will be developed, each describing a specific KPI for resource usage effectiveness or efficiency.

The EN 50600-4 series does not specify limits or targets for any KPI and does not describe or imply, unless specifically stated, any form of aggregation of individual KPIs into a combined nor an overall KPI for data centre resource usage effectiveness or efficiency.

This European Standard is intended for use by and collaboration between data centre managers, facility managers, ICT managers and main contractors.

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