



# SLOVENSKI STANDARD SIST EN IEC 62832-1:2021

01-februar-2021

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## Meritev, nadzor in avtomatizacija merilnega industrijskega procesa - Okvir za digitalno tovarno - 1.del: Splošna načela (IEC 62832-1:2020)

Industrial-process measurement, control and automation - Digital factory framework - Part 1: General principles (IEC 62832-1:2020)

Industrielle Leittechnik - Grundstruktur der digitalen Fabrik - Teil 1: Allgemeine Grundsätze (IEC 62832-1:2020)

Mesure, commande et automation dans les processus industriels - Cadre de l'usine numérique (digital factory) - Partie 1: Principes généraux (IEC 62832-1:2020)

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Ta slovenski standard je istoveten z: **EN IEC 62832-1:2020**

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### ICS:

25.040.40	Merjenje in krmiljenje industrijskih postopkov	Industrial process measurement and control
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EUROPEAN STANDARD

EN IEC 62832-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2020

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English Version

## Industrial-process measurement, control and automation - Digital factory framework - Part 1: General principles (IEC 62832-1:2020)

Mesure, commande et automation dans les processus industriels - Cadre de l'usine numérique (digital factory) -  
Partie 1: Principes généraux  
(IEC 62832-1:2020)

Industrielle Leittechnik - Grundstruktur der digitalen Fabrik -  
Teil 1: Allgemeine Grundsätze  
(IEC 62832-1:2020)

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Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

**EN IEC 62832-1:2020 (E)****European foreword**

The text of document 65/836/FDIS, future edition 1 of IEC 62832-1, prepared by IEC/TC 65 "Industrial-process measurement, control and automation" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62832-1:2020.

The following dates are fixed:

- latest date by which the document has to be implemented at national (dop) 2021-08-30 level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with the (dow) 2023-11-30 document have to be withdrawn

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In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 61360 (series)	NOTE	Harmonized as EN 61360 (series)
IEC 61360-1	NOTE	Harmonized as EN 61360-1
IEC 61360-2	NOTE	Harmonized as EN 61360-2
IEC 61987 (series)	NOTE	Harmonized as EN IEC 61987 (series)
IEC 61987-10:2009	NOTE	Harmonized as EN 61987-10:2009 (not modified)
IEC 62264 (series)	NOTE	Harmonized as EN 62264 (series)
IEC 62264-1:2013	NOTE	Harmonized as EN 62264-1:2013 (not modified)
IEC 62264-2	NOTE	Harmonized as EN 62264-2
IEC 62683 (series)	NOTE	Harmonized as EN 62683 (series)
ISO 11354-1:2011	NOTE	Harmonized as EN ISO 11354-1:2011 (not modified)
IEC 62656 (series)	NOTE	Harmonized as EN IEC 62656 (series)
ISO 19439	NOTE	Harmonized as EN ISO 19439

## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: [www.cenelec.eu](http://www.cenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 62832-2	-	Industrial-process measurement, control and automation - Digital factory framework - Part 2: Model elements	EN IEC 62832-2	-
IEC 62832-3	-	Industrial-process measurement, control and automation - Digital factory framework - Part 3: Application of Digital Factory for life cycle management of production systems	EN IEC 62832-3	-
IEC 62832	series	Industrial-process measurement, control and automation - Digital factory framework	EN IEC 62832	series
ISO/IEC 6523	series	Information technology - Structure for the identification of organizations and organization parts	-	-
ISO/IEC 11179-6	-	Information technology - Metadata registries (MDR) – Part 6: Registration	-	-
ISO/TS 29002-5	2009	Industrial automation systems and integration - Exchange of characteristic data – Part 5: Identification scheme	-	-

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IEC 62832-1

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# INTERNATIONAL STANDARD

## NORME INTERNATIONALE



**Industrial-process measurement, control and automation – Digital factory  
framework –  
Part 1: General principles**

**Mesure, commande et automation dans les processus industriels – Cadre de  
l'usine numérique (digital factory) –  
Partie 1: Principes généraux**

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**INDUSTRIAL-PROCESS MEASUREMENT, CONTROL  
AND AUTOMATION – DIGITAL FACTORY FRAMEWORK –****Part 1: General principles**

## FOREWORD

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International Standard IEC 62832-1 has been prepared by IEC technical committee 65: Industrial-process measurement, control and automation.

This first edition cancels and replaces the first edition of IEC TS 62832-1 published in 2016. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous Technical Specification:

- correction of terms and definition of additional terms (Clause 3);
- correction of description of header;
- moved UML diagram to IEC 62832-2.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
65/836/FDIS	65/845/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 62832 series, published under the general title, *Industrial-process measurement, control and automation – Digital Factory framework* can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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## INTRODUCTION

### 0.1 Market demand and situation

High performance, flexible dynamic processes, and agile machines and production systems are essential to meet the demands for quality, delivery and cost of the products. This situation results in an increased complexity of the plant life cycle. In addition, all existing information of a product or a production system is described and modified through the whole life cycle of a product or of a production system, for example during the planning, development process, and operation. This situation spurs the enterprise to exchange product data and production system data in electronic form.

However, each enterprise and each department inside the enterprise describe their products and production systems according to their own data management schemes, often using different terms, structures, and media.

EXAMPLE Examples for data management schemes are paper-based, databases, disks, e-catalogues, and cloud.

Therefore, no seamless information exchange between all the actors involved in the life cycles of both products and production systems can be found.

Efficient exchange of data between and within enterprises can only be performed if syntax (format) and semantics (meaning) of the information has been defined in a unanimous and shared manner.

### 0.2 History of standardization in this area

Earlier work on electronic product data started with the initial objective to replace paper data sheets with an electronic description of electronic components used in products, and to use it in software tools for electronic wiring and assembly (for example, when designing electronic boards).

Additionally, concepts were developed for profiling of devices used in production systems, in order to describe parameters and behavioural aspects to facilitate integration and reduce engineering costs, providing guides for standards developers.

NOTE 1 See Device Profile Guideline (IEC TR 62390).

IEC 61987-10 made an important step toward this objective by defining fundamentals that aim at describing devices used in production systems by creating lists of properties (LOPs). The properties themselves are compiled into blocks that describe given features of a device. Further parts of IEC 61987 and other related standards (e.g. IEC 62683 (all parts)) define reference LOPs for electronic/electric components and materials used in electro-technical equipment and systems, such as equipment for measuring flows, pressures, temperatures, levels and densities.

NOTE 2 Although the title of IEC 62683 is "Low-voltage switchgear and controlgear – Product data and properties for information exchange", the intent of IEC 62832 is to use the information exchange for interoperability in describing devices that are used in production systems.

IEC 61360-1, IEC 61360-2 and ISO 13584-42 specify the principles to be used for defining characterization classes of parts and their properties. As a result, a database was developed, also named IEC Common Data Dictionary (IEC CDD), which contains the reference collection of classes and associated properties. ISO 22745 (all parts) specifies open technical dictionaries (OTDs) and their application to master data. ISO/IEC Guide 77 provides recommendations for the description of products and their properties for the creation of these classes, catalogues and reference dictionaries.

NOTE 3 ISO/IEC Guide 77 uses the term "product". It is taken to include devices, processes, systems, installations, etc.