SLOVENSKI STANDARD
SIST EN 61360-2:2003

01-maj-2003

Nadomeğļ a:
SIST EN 61360-2:2000

Standardni tipi podatkovnih elementov s pripadajoļ o klasifikacijsko shemo za elektriļ ne komponente ï 2. del: Slovarska shema EXPRESS (IEC 61360- 2:2002)

Standard data element types with associated classification scheme for electric components -- Part 2: EXPRESS dictionary schema

Genormte Datenelementtypen mit Klassifikationsschema für elektrische Bauteile -- Teil 2: EXPRESS-Datenmodell

Types normalisés d'éléments de données avec plan de classification pour composants électriques -- Partie 2: Schéma d'un dictionnaire EXPRESS

Ta slovenski standard je istoveten z: **EN 61360-2:2002**

ICS:

29.100.20	Elektriļ ni in elektromehanski sestavni deli	Electrical and electromechanical components

SIST EN 61360-2:2003 **en**

EUROPEAN STANDARD **EN 61360-2**

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English version

Standard data element types with associated classification scheme for electric components
Part 2: EXPRESS dictionary schema
(IEC 61360-2:2002)

Types normalisés d'éléments de données avec plan de classification pour composants électriques
Partie 2: Schéma d'un dictionnaire EXPRESS
(CEI 61360-2:2002)

Genormte Datenelementtypen mit Klassifikationsschema für elektrische Bauteile
Teil 2: EXPRESS-Datenmodell
(IEC 61360-2:2002)

This European Standard was approved by CENELEC on 2002-03-01. 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.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists 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 Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Ref. No. EN 61360-2:2002 E

Foreword

The text of document 3D/92/FDIS, future edition 2 of IEC 61360-2, prepared by SC 3D, Data sets for libraries, of IEC TC 3, Documentation and graphical symbols, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61360-2 on 2002-03-01.

This European Standard supersedes EN 61360-2:1998.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2002-12-01

- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2005-03-01

Annexes designated "normative" are part of the body of the standard.
Annexes designated "informative" are given for information only.
In this standard, annex ZA is normative and annexes A and B are informative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61360-2:2002 was approved by CENELEC as a European Standard without any modification.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 61360-1	2002	Standard data element types with associated classification scheme for electric components Part 1: Definitions - Principles and methods	EN 61360-1	2002
IEC 61360-4	1997	Part 4: IEC reference collection of standard data element types, component classes and terms	EN 61360-4	1997
ISO 31	Series	Quantities and units of space and time	-	-
ISO 639	1988	Code for the representation of names of languages	-	-
ISO 843	1997	Information and documentation - Conversion of Greek characters into Latin characters	-	-
ISO 4217	1995	Codes for the representation of currencies and funds	-	-
ISO 6093	1985	Information processing - Representation of numerical values in character strings for information interchange	-	-
ISO 8601	2000	Data elements and interchange formats - Information interchange - Representation of dates and times	-	-
ISO 8859-1	1998	Information technology - 8-bit single-byte coded graphic character sets Part 1: Latin alphabet No. 1	-	-
ISO 8879 + A1	1986 1988	Information processing - Text and office systems - Standard Generalized Markup Language (SGML)	EN 28879	1990

Publication	Year	Title	EN/HD	Year
ISO 9735	1988	Electronic data interchange for administration, commerce and transport (EDIFACT) - Application level syntax rules	EN 29735	1990
ISO 10303-11	1994	Industrial automation systems and integration - Product data representation and exchange Part 11: Description methods: The EXPRESS language reference manual	ENV ISO 10303-11	1995
ISO 10303-21	1994	Part 21: Implementation methods: Clear text encoding of the exchange structure	ENV ISO 10303-21	1995
ISO 10303-41	2000	Part 41: Integrated generic resource: Fundamentals of product description and support	-	-
ISO 10303-42	2000	Part 42: Integrated generic resource: Geometric and topological representation	-	-
ISO 12083	1994	Information and documentation - Electronic manuscript preparation and markup	-	-
ISO 13584-26	- [1)]	Industrial automation systems and integration - Parts library Part 26: Logical resource: Information supplier identification	-	-
ISO 13584-42	- [1)]	Part 42: Description methodology: Methodology for structuring part families	-	-

[1)] Undated reference.

INTERNATIONAL STANDARD

IEC 61360-2

Second edition
2002-02

Standard data element types with associated classification scheme for electric components –

Part 2: EXPRESS dictionary schema

Types normalisés d'éléments de données avec plan de classification pour composants électriques –

Partie 2: Schéma d'un dictionnaire EXPRESS

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International Electrotechnical Commission
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

STANDARD DATA ELEMENT TYPES WITH ASSOCIATED CLASSIFICATION SCHEME FOR ELECTRIC COMPONENTS –

Part 2: EXPRESS dictionary schema

FOREWORD

1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.
4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61360-2 has been prepared by subcommittee 3D: Data sets for libraries, of IEC technical committee 3: Information structures, documentation and graphical symbols.

This second edition cancels and replaces the first edition published in 1998 and constitutes a technical revision

The text of this standard is based on the following documents:

FDIS	Report on voting
3D/92/FDIS	3D/95/RVD

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

This publication has been drafted in accordance with the ISO/IEC Directives, Part 3.

Annexes A and B are for information only.

IEC 61360 consists of the following parts, under the general title *Standard data element types with associated classification scheme for electric components:*

– Part 1 : Definitions – Principles and methods
– Part 2 : EXPRESS dictionary schema
– Part 3 : Maintenance and validation procedures
– Part 4 : IEC reference collection of standard data element types, component classes and terms.
– Part 5 : Extensions to the EXPRESS dictionary schema[1].

The committee has decided that the contents of this publication will remain unchanged until 2004. At this date, the publication will be

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

1 To be published

INTRODUCTION

The common ISO/IEC dictionary schema presented here is based on the intersection of the scopes of the following standards:

– IEC 61360-1

– ISO 13584-42

Relevant parts of the scope clauses of these standards include the following:

IEC 61360-1:
"This part of IEC 61360 specifies the principles to be used for defining technical data element types with associated classification schemes needed to describe fully electric components, including electronic and electromechanical components and materials used in electro-technical equipment and systems."

ISO 13584-42:
" This part of ISO 13584 specifies:

- the attributes that shall be provided by library suppliers to describe the families and properties of parts. These attributes are part of the content of their parts library and shall be stored in the dictionary of the user library;
- the specifications of these attributes in the EXPRESS information model that provides for the exchange of such dictionary data".

IEC SC 3D and ISO TC 184/SC4 agreed NOT to change and/or modify the presented EXPRESS model independent of each other in order to guarantee the harmonization and the reusability of the work of both committees.

Requests for amendments should therefore be sent to both committees. These requests should be adopted by both committees before modifying the EXPRESS information model.

STANDARD DATA ELEMENT TYPES WITH ASSOCIATED CLASSIFICATION SCHEME FOR ELECTRIC COMPONENTS –

Part 2: EXPRESS dictionary schema

1 General

1.1 Scope

This part of IEC 61360 presents a common ISO/IEC dictionary schema based on the intersection of the scopes of two base standards IEC 61360-1 and ISO 13584-42.

The presented EXPRESS model represents a common formal model for the two standards and facilitates a harmonization of both.

The IEC 61360-2 standard forms the master document. ISO 13584-42 contains a copy of the IEC 61360-2 EXPRESS model in an informative annex

This standard provides a formal model for data according to the scope as given in the publications cited above, and thus provides a means for the computer-sensible representation and exchange of such data.

The intention is to provide a common information model for the work of IEC TC 3D and ISO TC 184/SC4, thus allowing for the implementation of dictionary systems dealing with data delivered according to either of the standards elaborated by both committees.

Two schemas are provided in this part of IEC 61360 defining the two options that may be selected for an implementation. Each of these options is referred to as a conformance class.

- The **ISO13584_IEC61360_dictionary_schema**[2] provides for modelling and exchanging technical data element types with associated classification scheme but without modelling the definitions of the terms used in the data element type definitions. It constitutes conformance class 1 of this part of IEC 61360.
- The **ISO13584_IEC61360_language_resource_schema** provides resources for permitting strings in various languages. It has been extracted from the dictionary schema, since it could be used in other schemata. It is largely based on the **support_resource_schema** from ISO 10303-41: STEP part 41: "Fundamentals of Product Description and Support", and can be seen as an extension to that. It allows for the usage of one specific language throughout an exchange context (Physical File) without the overhead introduced when multiple languages are used.

When used together with ISO 10303-21, each schema defines one single exchange format.

The exchange format defined by conformance class 1 is fully compatible with the ISO 13584 series.

The exchange format defined by conformance class 2 also provides for exchanging the definitions of the terms used in the defining of data element types and their associated classification scheme when such an exchange is required, despite the lack of compatibility with implementations compliant with the ISO 13584 series.

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2 All the names that stand for items, formally defined within the EXPRESS model, are presented in **bold face.**

1.2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 61360. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of IEC 61360 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 61360-1:1995, *Standard data element types with associated classification scheme for electric components – Part 1: Definitions – Principles and methods*

IEC 61360-4:1997, *Standard data element types with associated classification scheme for electric components – Part 4: IEC reference collection of standard data element types, component classes and terms*

ISO 31 (all parts), *Quantities and units*

ISO 639:1988, *Code for the representation of names of languages*

ISO 843:1997, *Information and documentation – Conversion of Greek characters into Latin characters*

ISO 4217:1995, *Codes for the representation of currencies and funds*

ISO 6093:1985, *Information processing – Representation of numerical values in character strings for information interchange*

ISO 8601:2000, *Data elements and interchange formats – Information interchange – Representation of dates and times*

ISO 8859-1:1998, *Information technology – 8-bit single-byte coded graphic character sets – Part 1: Latin alphabet No. 1*

ISO 8879:1986, *Information processing – Text and office systems – Standard Generalized Markup Language (SGML)*

ISO 9735:1988, *Electronic data interchange for administration, commerce and transport (EDIFACT) – Application level syntax rules*

ISO 10303-11:1994, *Industrial automation systems and integration – Product data representation and exchange – Part 11: Description methods: The EXPRESS language reference manual*

ISO 10303-21:1994, *Industrial automation systems and integration – Product data representation and exchange – Part 21: Implementation methods: Clear text encoding of the exchange structure*

ISO 10303-41:2000, *Industrial automation systems and integration – Product data representation and exchange – Part 41: Integrated generic resources: Fundamentals of product description and support*

ISO 10303-42:2000, *Industrial automation systems and integration – Product data representation and exchange – Part 42: Integrated generic resources: Geometric and topological representation*

ISO 12083:1994, *Information and documentation – Electronic manuscript preparation and markup*

ISO 13584-26, *Industrial automation systems and integration – Parts library – Part 26: Logical resource: Information supplier identification*

ISO 13584-42, *Industrial automation systems and integration – Parts library – Part 42: Description methodology: Methodology for structuring part families*

2 Definitions

For the purpose of this part of IEC 61360 the following definitions apply:

2.1
basic semantic unit (BSU)
entity that provides an absolute and universal identification of certain objects of the application domain (for example classes, data element types)

2.2
dictionary element
set of attributes that constitutes the dictionary description of certain objects of the application domain (for example classes, data element types)

2.3
common dictionary schema
information model for a dictionary, using the information modelling language EXPRESS

2.4
data type
set of allowed values of a data element type

NOTE Within IEC the **data_type** that is either a unit of measure or a value domain is defined separately for each data element type.

2.5
IEC root class
class that is the superclass of all the classes defined in IEC 61360-4; its class code is 'AAA000' and its version is '001'

2.6
applicable data element type
data element type that is defined for some component class and that applies to any component that belongs to this component class

2.7
visible data element type
data element type that is defined for some component class and that may or may not apply to the different components of this component class

NOTE 1 The code of the class where a data element type is defined as visible is part of the identification of this data element type.

NOTE 2 Within IEC all data element types are defined as visible at the level of the root class, that is the superclass of both the component class and the material class.

2.8
item
a thing whose description can be captured by a class structure and a set of properties

3 Abbreviations

In this part of IEC 61360 the following abbreviations are used:

- BSU: Basic Semantic Unit;
- DET: Data Element Type;
- ICS: International Classification of Standards;
- SI: International System of Units.

4 Overview of the common dictionary schema and compatibility with ISO 13584

In the following subclauses, the architecture of the common dictionary schema will be presented and it will be explained how the same information model has to be used in the International Standards to ensure their compatibility.

The common dictionary schema combines the requirements of IEC 61360 and ISO 13584. Therefore, it contains resources to accommodate the specific requirements of both International Standards. These resources are provided either as optional capabilities or as subtypes of the types defined to fulfil the common requirements.

4.1 Use of the common dictionary schema to exchange IEC 61360-1 compliant data

a) The ISO 13584 specific extensions to support multilingual capability are not reguired for the exchange of dictionary elements defined according to IEC 61360-1. However, these extensions, that is **present_translations**, **translated_label** and **translated_text**, shall be used in the exchange structure for compatibility reasons.

b) If a component class has a superclass, the **coded_name** shall be defined as a **value_code** in the **domain** of the classifying data element type of the superclass.

c) If a classifying data element type exists within a specific component class, for each **value** in its **domain** a subclass and a **term** shall be defined.

d) A classifying data element type, optional in conformance class 2 in the common dictionary schema, shall always be provided for the component classes defined according to IEC 61360-1.

e) Only SI units shall be used although the common dictionary schema enables the use of many kind of system units. When using this schema however for the exchange of IEC 61360 compliant data, only SI shall be used for quantitative data element types.

4.2 Compatibility with ISO 13584-42

An implementation compliant with this part of IEC 61360 shall support all the entities, types and associated constraints that belong to the conformance class it claims to support.

Therefore, conformance to conformance class 1 of this part of IEC 61360 requires that all the entities, types and associated constraints defined in the common dictionary schema be supported. ISO 13584 data conforming to the common dictionary schema may thus be processed by an IEC 61360 implementation, whether it conforms to conformance class 1, or to conformance class 2 that includes all the features of conformance class 1.

In ISO 13584, a specific conformance class[3] is intended to contain all the entities, types and associated constraints defined in the common dictionary schema. An ISO 13584 compliant implementation conforming to this conformance class shall therefore be able to support IEC data that belongs to conformance class 1 of this part of IEC 61360.

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[3] This conformance class is defined as conformance class 0 in ISO 13584-24.