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

Part 2: EXPRESS dictionary schema

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

Part 2: EXPRESS dictionary schema

FOREWORD

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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 consolidated version of IEC 61360-2 is based on the second edition (2002) [documents 3D/92/FDIS and 3D/95/RVD] and its amendment 1 (2003) [documents 3D/117/FDIS and 3D/126/RVD].

It bears the edition number 2.1.

A vertical line in the margin shows where the base publication has been modified by amendment 1.

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 2005. At this date, the publication will be

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- withdrawn;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

A bilingual version of this publication may be issued at a later date.

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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 provides a firm basis for the clear and unambiguous definition of characteristic properties (data element types) of all elements of electrotechnical systems from basic components to subassemblies and full systems. Although originally conceived in the context of providing a basis for the exchange of information on electric/electronic components, the principles and methods of this standard may be used in areas outside the original conception such as assemblies of components and electrotechnical systems and subsystems."

ISO 13584-42:
"This part of ISO 13584 provides rules and guidelines for library data suppliers to create hierarchies of families of parts according to a common methodology intended to enable multi-supplier consistency. These rules pertain to the following: the method for grouping parts into families of parts to form a hierarchy; the dictionary elements that describe the families and properties of parts."

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 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.

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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 referenced documents are indispensable for the application 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.

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*