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TECHNICAL SPECIFICATION

colour inside

Information model covering the contents of IEC 81346-1 and IEC 81346-2, IEC 61175, IEC 61666 and IEC 81714-3

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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FOREWORD

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Technical specifications are subject to review within three years of publication to decide whether they can be transformed into International Standards.

IEC 62771, which is a technical specification, has been prepared by IEC technical committee 3: Information structures, documentation and graphical symbols.

The text of this technical specification is based on the following documents:

Enquiry draft	Report on voting
3/1080/DTS	3/1102/RVC

Full information on the voting for the approval of this technical specification 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 2.

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

- transformed into an International standard,
- 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- withdrawn,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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INFORMATION MODEL COVERING THE CONTENTS OF IEC 81346-1 AND IEC 81346-2, IEC 61175, IEC 61666 AND IEC 81714-3

1 Scope

This Technical Specification contains a formal reference information model of the concepts and methods established in IEC 81346-1, IEC 81346-2, IEC 61175, IEC 61666 and IEC 81714-3, which are its normative basis.

The information model is normative with respect to data exchange.

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.

IEC 61175:2005, *Industrial systems, installations and equipment and industrial products – Designation of signals*

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

IEC 61360-DB, *IEC Common Data Dictionary*[1]

IEC 61666, *Industrial systems, installations and equipment and industrial products – Identification of terminals within a system*

IEC 81346-1, *Industrial systems, installations and equipment and industrial products – Structuring principles and reference designations – Part 1: Basic rules*

IEC 81346-2, *Industrial systems, installations and equipment and industrial products – Structuring principles and reference designations – Part 2: Classification of objects and codes for classes*

IEC 81714-3, *Design of graphical symbols for use in the technical documentation of products – Part 3: Classification of connect nodes, networks and their encoding*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 81346-1, IEC 81346-2, IEC 61175, IEC 61666, and IEC 8174-3 apply.

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[1] At the next revision the title of the IEC 61360 series will be modified to: *Standard data element types with associated classification scheme for products and services*, with Part 1: *Definitions, principles and methods*, Part 2: *EXPRESS Dictionary schema*, Part 4: *IEC reference collection for products and services used in electrotechnology*, and Part 5: *Extensions to the EXPRESS dictionary schema*. Likewise the title of the database will be: IEC 61360-DB*: IEC Common Data Dictionary*.

4 General

The standards IEC 81346-1, IEC 81346-2, IEC 61175, IEC 61666 and IEC 81714-3 are interrelated, but the concepts used in these standards have so far only been dealt with separately in the different publications. The purpose of the present technical specification is to illustrate their relations by means of a common reference information model.

When data is transferred or exchanged, the exchange shall conform to this reference model. The model is conceptual and independent from any implementation method.

For the preparation of the information model, the EXPRESS modelling language, described in ISO 10303-11, has been used. The graphical form is presented using EXPRESS-G.

The information model is contained in Annex A.

0 provides an overview by means of a graphical representation of the structure and constraints of the application objects. The computer interpretable textual form is represented in A.3.

A.1 lists the entities and attributes of the information model and A.2 contains the detailed verbal descriptions of the entities and attributes.

The reference information model depicts the requirements set up, using where possible available subsets of application reference models of the ISO 10303 series.

The model is not intended to be complete within the framework of neither integrated resource models nor application reference models developed within the ISO 10303 series. It is complete with respect to the requirements established within this publication.

NOTE 1 For an introduction to EXPRESS-G, see http://tc3.iec.ch/txt/xpress.pdf.

NOTE 2 Annex A is available in the English language only.

Annex B contains a set of source definitions for Data Element Types (DETs) derived from the common reference information model.

Annex A
(normative)

Reference information model

A.1 List of entities and attributes

This clause provides an alphabetically ordered list of the entities and attributes of the reference information model described in this Annex.

A.2 Entity descriptions

A.2.1 Domain

The Domain is a collection of attributes providing information about the context of the identification of an object, in which the identification is unambiguously defined.

The data associated with a Domain are the following:

- classified_as S[0:?];
- related_to;
- id.

A.2.1.1 classified_as S[0:?]

This attribute specifies the relation to a classification code associated to a specific Domain based on a specified classification system.

A.2.1.2 related_to

This attribute establishes the relation to an Object within a given Domain.

A.2.1.3 id

This attribute provides the identification number assigned to a Domain.

A.2.2 Object

The Object entity is a collection of attributes establishing relationships among Object, Domain, Object_aspect, Class, Signal, Signal_variant and Terminal.

The data associated with an Object are the following:

- classified_as S[0:?];

- has_views S[1:?].

A.2.2.1 classified_as S[0:?]

This attribute specifies the relation to a classification code associated to a specific Object based on a specified classification system.

A.2.2.2 has_views S[1:?]

This attribute lists the different views existing on the Object. At least one view shall be defined.

A.2.3 Object_aspect

The Object_aspect entity represents an aspect of an Object and provides a mechanism for representing the relationship between an Object and its constituent objects within an aspect.

The data associated with an Object_aspect are the following:

- is_a_view_of;
- is_aspect;
- consist_of S[0:?].

Constraint: The aspect of the Object_aspect instances being used as constituents of the current instance shall be the same as the aspect of the current instance.

A.2.3.1 is_a_view_of

This attribute specifies the Object of which the current instance represents a view, i.e. an aspect.

A.2.3.2 is_aspect

This attribute specifies the aspect the current instance is representing.

A.2.3.3 consists_of S[0:?]

This attribute lists the instances of Object_aspect_in_object_aspect being constituents of the current instance.

A.2.4 Object_aspect_in_object_aspect

The Object_aspect_in_object_aspect represents the usage of an Object_aspect within an Object_aspect.

The data associated with Object_aspect_in_object_aspect are the following:

- uses;
- single_level_reference_designation.

A.2.4.1 uses

This attribute specifies the Object_aspect being used at the current instance.

A.2.4.2 single_level_reference_designation

This attribute provides the reference designation assigned to the current instance with respect to the Object of which the specific Object is a direct constituent in one aspect.