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Industrial automation systems and integration — Integration of life-cycle data for process plants including oil and gas production facilities —

Part 100: Vocabulary

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. It is noted different approval criteria are needed for the different types of ISO documents. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by Technical Committee ISO/TC 184, *Automation systems and integration*, Subcommittee SC 4, *Industrial data*.

A list of all parts in the ISO 15926 series can be found on the ISO website.

Any feedback or questions on this document can be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

The ISO 15926 series specifies the representation of process plant life-cycle information. This representation is based on a generic, conceptual data model that is suitable as the basis for implementation in a shared database or data warehouse.

The data model is designed to be used in conjunction with reference data: standard instances that represent data common to a substantial number of experts from the process plant engineering supply chain.

The support for a specific life-cycle activity depends on the use of an appropriate selection of reference data in conjunction with an appropriate data model derived from the ISO 15926 data model ontology.

This document lists terms used in the different parts of the ISO 15926 series. The terms are grouped based on ISO/TS 23164:2025 [1]. All terms used in the ISO 15926 series are indexed in the MS Excel and JSON file available at the following URL:

https://standards.iso.org/iso/15926/-100/ed-1/en

The approach used to develop the content of this document is described in Annex A.

The terms in this document will be updated in accordance with any new or revised parts that are developed, and revised editions will be released on a regular basis.

Industrial automation systems and integration — Integration of life-cycle data for process plants including oil and gas production facilities —

Part 100: Vocabulary

1 Scope

This document defines terms related to integration of life-cycle data for process plant installations. These terms are used by the parts in the ISO 15926 series.

The following are outside the scope of this document:

— the reference data items that are contained in the reference data library, such as those covered in ISO/TS 15926-4:2024 [2];

— the entities used in the data model, such as those covered in ISO 15926-2:2003 [3].

2 Normative references

There are no normative references in this document.

3 Terms and definitions

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at http://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1 Terms related to basic concept

3.1.1
4-dimensionalism
data modelling approach that an object's persistence through time is like its *extension* (3.1.9) through space

3.1.2
asset
item, *thing* (3.1.23) or *entity* (3.1.8) that has potential or actual *value* (3.15.64) to an organization

[SOURCE: ISO 55000:2024 [4], 3.1.1, modified — Notes 1 and 2 to entry have been deleted.]

3.1.3
conceptual data model
data model in the three schema architecture defined by ISO TR 9007:1987 [5] in which the structure of *data* (3.1.4) is represented in a form independent of any physical storage or external presentation format

3.1.4
data
representation of *information* (3.1.10) in a formal manner suitable for communication, interpretation, or processing by human beings or computers

[SOURCE: ISO 10303-2:2024 [6], 3.1.207]

3.1.5
document
thing (3.1.23) serving as a representation of *information* (3.1.10) by means of symbolic marks

Note 1 to entry: The word "document" is used in a wider sense. Next to the information content of customary (paper) documents (not a paper document itself), such as equipment data sheets or purchase orders, it can also be used for other sets of *data* (3.1.4), like the transaction data that are input to an *engineering* (3.11.3) program or data sets that are exchanged between systems of business partners.

3.1.6
engineering data
data (3.1.4) that represents the design and or *engineering* (3.11.3) of a system or a *system element* (3.5.2)

Note 1 to entry: The scope can be limited to a specific discipline (electrical, mechanical, civil), however after integrating all engineering data obtained from engineering tools, the result should represent the integrated design in a consistent way, which implies appropriate quality and harmonization of the data, obtained from the various tools.

3.1.7
entity
<data model> class (3.2.1) of *information* (3.1.10) defined by common *properties* (3.13.3)

Note 1 to entry: In OWL[7], which is used by some parts of the ISO 15926 series for implementation, an entity is a storage unit that an XML (extensible markup language) document can consist of.

[SOURCE: ISO 10303-2:2024 [6], 3.2.9, modified — Note 1 of entry has been added.]

3.1.8
entity
<linguistics> something that exists separately from other things and has its own identity

3.1.9
extension
totality of objects to which a concept corresponds

Note 1 to entry: ISO/TS 15926-4:2024 [2] is an extension of ISO 15926-2:2003 [3], wherein all *reference data items* (3.1.18) are classified as *members* (3.2.10) of ISO 15926-2:2003 [3] entities.

[SOURCE: ISO 22745-2:2010 [8], 4.3, modified — Note 1 to entry has been added.]

3.1.10
information
facts, concepts, or instructions

[SOURCE: ISO 10303-2:2024 [6], 3.1.227]

3.1.11
life-cycle information
information (3.1.10) about an *individual* (3.2.6), collected at any point in time during the life-cycle of that individual

3.1.12
metadata
data (3.1.4) that describes and defines other data

[SOURCE: ISO/IEC 11179-1:2023 [9], 3.2.26]

3.1.13
model
<linguistics> simplified description, especially a mathematical one, of a system or process, to assist calculations and predictions

3.1.14
ontology
<industrial data> formal *statement* (3.15.50) of an understanding of the world

Note 1 to entry: An ontology can be represented in any language. It need not be represented in a language specifically designed for ontologies, such as OWL. An ontology can have different representations.

Note 2 to entry: An ontology does not specify what *data* (3.1.4) must be recorded about the world.

Note 3 to entry: The ontology is principally concerned with the world outside a computer system.

3.1.15
ontology
<ISO 15926 implementation methods with template methodology and OWL> formal representation of a set of concepts within a domain and the relationships between those concepts

Note 1 to entry: Ontologies are usually used to reason about the properties of that domain, and can be used to define the domain.

Note 2 to entry: Ontologies are usually expressed in a logic-based language, but this is not a requirement, neither is the need for reasoning capability. In addition to relationships, classes, properties, instances and axioms can be used.

3.1.16
process plant life-cycle data
data (3.1.4) that represents, in computer-processable form, *information* (3.1.10) about one or more process plants in or throughout any phase or phases of a process plant's life-cycle, including design, *engineering* (3.11.3), construction, operation, maintenance, decommissioning and demolition

3.1.17
reference data
process plant life-cycle data (3.1.16) that represent *information* (3.1.10) about *classes* (3.2.1) or *individuals* (3.2.6) things which are common to many facilities or of interest to many users

3.1.18
reference data item
RDI
thing (3.1.23) that is defined within a *reference data library* (3.1.19)

3.1.19
reference data library
RDL
managed collection of *reference data items* (3.1.18)

3.1.20
relationship
connection among *model* (3.1.13) elements

Note 1 to entry: ISO 15926-2:2003 [3] entity “relationship” is something that one *thing* (3.1.23) has to do with another. ISO 15926-2:2003 [3] uses the spatio-temporal paradigm. ISO 15926-2:2003 [3] entity “relationship” does not exist in space-time.

[SOURCE: ISO/IEC 11179-3:2023 [10], 3.1.4, modified — Note 1 to entry has been rewritten.]

3.1.21
taxonomy
collection of controlled vocabulary terms organized in a hierarchical structure, where each term is in one or more parent/child (broader/narrower) relationship to other terms in the taxonomy