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

Part 7:

Implementation methods for the integration of distributed systems: Template methodology

Systèmes d'automatisation industrielle et intégration — Intégration de données de cycle de vie pour les industries de «process», y compris les usines de production de pétrole et de gaz —

Partie 7: Méthodes de mise en œuvre pour l'intégration de systèmes distribués: Méthodologie de modèle



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ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75% of the member bodies casting a vote.

In other circumstances, particularly when there is an urgent market requirement for such documents, a technical committee may decide to publish other types of normative document:

- an ISO Publicly Available Specification (ISO/PAS) represents an agreement between technical experts in an ISO working group and is accepted for publication if it is approved by more than 50% of the members of the parent committee casting a vote;
- an ISO Technical Specification (ISO/TS) represents an agreement between the members of a technical committee and is accepted for publication if it is approved by 2/3 of the members of the committee casting a vote.

An ISO/PAS or ISO/TS is reviewed every three years with a view to deciding whether it can be transformed into an International Standard.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO/TS 15926-7 was prepared by Technical Committee ISO/TC 184, *Automation systems and integration*, Subcommittee SC 4, *Industrial data*.

ISO 15926 is organized as a series of parts, each published separately. The structure of ISO 15926 is described in ISO 15926-1.

Each part of ISO 15926 is a member of the following series: data model, reference data, implementation methods, conformance testing methodology and framework, characterization methods, abstract test suites. This part of ISO 15926 is a member of the implementation methods series.

A complete list of parts of ISO 15926 is available from the following URL:

http://www.tc184-sc4.org/titles/OIL_GAS_Titles.htm

ISO 15926 is an International Standard for the representation of process plant life-cycle information. This representation is specified by 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 information common to a number of users, process plants, or both. The support for a specific life-cycle activity depends on the use of appropriate reference data in conjunction with the data model.

ISO 15926 is organized as a number of parts, each published separately. This part of ISO 15926 specifies the template methodology and is independent of implementation methodologies and computer languages.

This part of ISO 15926 deals with the template methodology, which defines strict models of ISO 15926-2 conceptual model elements which can be used in data modelling, integration and interoperability methods. This part of ISO 15926 is independent of implementation languages, implementation infrastructure and test methods.

This part of ISO 15926 serves as the basis for implementation languages, implementation infrastructure and test methods.

This part of ISO 15926 addresses:

- the method of first-order logic used;
- template syntax;
- the semantics of templates;
- the method of template expansion;
- the definition of proto templates;
- the initial set of templates.

Readers of this part of ISO 15926 require an understanding of conceptual data models and of ISO 15926-2.

The target audiences for this part of ISO 15926 are as follows:

- technical managers wishing to determine whether ISO 15926 is appropriate for their business needs;
- implementers.

In this part of ISO 15926, the same English language word might be used to refer to a real world thing, to an EXPRESS representation of the real world thing, or to an RDF/XML representation of the real-world thing. These uses are distinguished by the following typographic conventions:

- if a word or phrase occurs in the same typeface as the surrounding narrative text, the word or phrase refers to the real-world thing;
- if the word or phrase occurs in **bold** typeface, it refers to the EXPRESS representation from the ISO 15926-2 data model;

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- if the word or phrase occurs in **bold camel case** typeface, it refers to a term in the ISO 15926-2 language, as specified in 4.1;

EXAMPLE 2 **ClassOfApprovalByStatus**

- if the word or phrase occurs in *italic camel case* typeface, it refers to a template name.

EXAMPLE 3 *RTriple(z, x, y)*

References to identifiers in examples are fictitious.

In this part of ISO 15926, diagrams are occasionally used to illustrate ISO 15926-2 modelling patterns. The symbols used in instance diagrams are a minor modification of the symbols used in ISO 15926-2.