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

**Part 2:
Data model**

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*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 —*

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Partie 2: Modèle de données



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Published in Switzerland

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Foreword

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.

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 15926-2 was prepared by Technical Committee ISO/TC 184, *Industrial automation systems and integration*, Subcommittee SC 4, *Industrial data*.

This International Standard is organized as a series of parts, each published separately. The structure of this International Standard is described in ISO 15926-1. A complete list of parts of ISO 15926 is available from the Internet:

<http://www.tc184-sc4.org/titles/15926_Titles.rtf>
<https://standards.iteh.ai/catalog/standards/sist/fe102d8b-5f7d-43f5-b512-3547d92ab53f/iso-15926-2-2003>

Introduction

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 a conceptual data model for computer representation of technical information about process plants.

The organization of this part of ISO 15926 is as follows:

- clause 1 specifies the scope and field of application of this part of ISO 15926;
- clause 2 identifies additional standards that, through references in this part of ISO 15926, constitute provisions of this part of ISO 15926;
- clause 3 defines terms used in this part of ISO 15926;
- clause 4 provides an overview of the fundamental concepts and assumptions that form the basis for the data model;
- clause 5 specifies the data model using the EXPRESS language (ISO 10303-11) and contains the EXPRESS-G diagrams that illustrate the structure of the model.

Readers of this part of ISO 15926 require knowledge of the information used by the designers, constructors and operators of process plants; an understanding of conceptual data models and the EPISTLE¹⁾ data modelling principles [5]; and knowledge of the EXPRESS language.

In this International Standard the same English language words may be used to refer to a real world thing or to an EXPRESS data type that represents the real world thing. These uses are distinguished by typographic convention. 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 type. Names of EXPRESS schemas also occur in bold typeface.

In the definitions of entity data types declared in this document, the wording “A <entity data type name> is ...” is used as a synonymous phrase for “A member of the class represented by the <entity data type name> entity data type is ...”.

¹⁾ EPISTLE is the European Process Industry STEP Technical Liaison Executive.

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

Part 2: Data model

1 Scope

This part of ISO 15926 specifies a conceptual data model for computer representation of technical information about process plants.

The following are within the scope of this part of ISO 15926:

- specification of requirements to produce, process, and transport process materials;
- specification of functions required to produce and process the required materials, including the following:
 - hydrocarbon process and conditioning systems,
 - injected gas and water conditioning and injection systems,
 - oil and gas product transport systems,
 - safety and control systems,
 - electricity generation and supply systems,
 - steam generation and supply systems,
 - structures,
 - buildings and accommodation;
- specification and selection of materials and equipment to provide the required production and processing functions, including information about market available materials and equipment;
- installation and commissioning of plant equipment;
- production and process operations, including process conditions and consumption, yields and quality of process material;
- maintenance and replacement of equipment.

The following are outside the scope of this part of ISO 15926:

- construction of buildings, production facilities and equipment.