INTERNATIONAL STANDARD

ISO
19439

First edition
2006-04-15

Enterprise integration — Framework for enterprise modelling

Entreprise intégrée — Cadre de modélisation d'entreprise

PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.
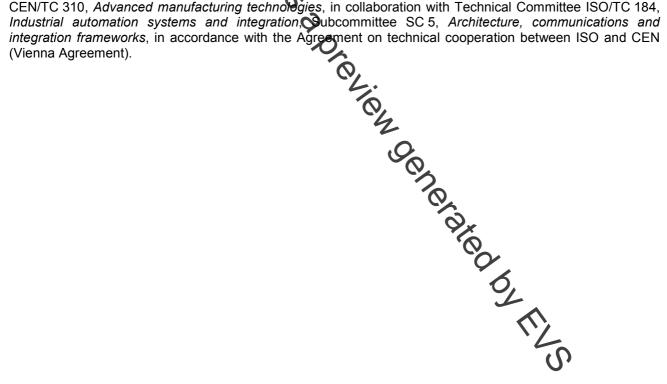

Contents

Page

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 19439 was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 310, *Advanced manufacturing technologies*, in collaboration with Technical Committee ISO/TC 184, *Industrial automation systems and integration*, Subcommittee SC 5, *Architecture, communications and integration frameworks*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Introduction

This framework defines and specifies the generic concepts that are required to enable the creation of enterprise models for industrial businesses and to provide support for the use of frameworks by industrial enterprises.

Enterprise modelling consultancies and tool vendors have developed enterprise modelling methodologies and supporting tools that address phases of the enterprise life cycle and various aspects of enterprise modelling. These methodologies and tools support business decision-making (such as process visualization and simulation), enterprise process management, control and monitoring of operational processes (such as workflow) and performance monitoring (such as visualization of work in progress). This framework provides a unified conceptual basis for model-based enterprise engineering that enables consistency, convergence and interoperability of the various modelling methodologies and supporting tools. The framework does not encompass methodological processes; it is neutral in this regard.

ISO 15704:2000, 4.2.2 (see also A.3.1.2) places requirements on the description of the essential roles of humans. In this International Standard, these are described in terms of:

— organizational roles that are specified in the Organization View, which captures the various assigned responsibilities and required capabilities (skills);

— operational roles that are specified in the Resource View, which captures the operational capabilities (skills) and which are then matched to the ones identified in the Function View.

The Annex A contains a general description of the concepts of enterprise models, modelling frameworks and modelling language constructs (as defined in ENV 12204:1996) as background to the normative content of Clauses 5 and 6. Annex B describes with illustrative examples how the enterprise modelling framework can be used by both enterprise model developers and enterprise model tool developers.

Enterprise integration — Framework for enterprise modelling

1   Scope

This International Standard specifies a framework conforming to requirements of ISO 15704, which serves as a common basis to identify and coordinate standards development for modelling of enterprises, emphasising, but not restricted to, computer integrated manufacturing. This International Standard also serves as the basis for further standards for the development of models that will be computer-enactable and enable business process model-based decision support leading to model-based operation, monitoring and control.

In this International Standard, four enterprise model views are defined in this framework. Additional views for particular user concerns can be generated but these additional views are not part of this International Standard. Possible additional views are identified in ISO 15704.

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.

ISO 15704:2000, *Industrial automation systems — Requirements for enterprise-reference architectures and methodologies*

3   Terms and definitions

For the purposes of this document, the following terms and definitions apply.

NOTE   Definitions copied verbatim from other standards are followed by a reference in brackets to the source standard. Definitions that have been adapted from other standards are followed by an explanatory note.

3.1
abstraction
shortening in duration or extent with no sacrifice of sense, used to differentiate between a real-world system and a model of the real world

[ISO 14258:1998]

3.2
attribute
piece of information stating a property of an entity

[ISO 15704:2000]

3.3
behaviour
manner in which the whole or part of a system acts and reacts to perform a function

NOTE   Adapted from ISO 15704:2000.

1