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Australian Standard™

Industrial automation systems and integration—Integration of industrial data for exchange, access and sharing

Part 2: Integration and mapping methodology

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Part 2: Integration and mapping methodology

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PREFACE

This Standard was prepared by the Standards Australia Committee IT-006, Information Technology for Industrial Automation and Integration.

This Standard is identical with, and has been reproduced from, ISO/TS 18876-2:2003, *Industrial automation systems and integration—Integration of industrial data for exchange, access and sharing,* Part 2*: Integration and mapping methodology*.

The objective of this Standard is to provide and establish an architecture, a methodology, and other specifications for integrating industrial data for exchange, access and sharing.

This Standard is Part 2 of AS ISO 18876—2004, *Industrial automation systems and integration—Integration of industrial data for exchange, access and sharing*, which is published in parts as follows:

Part 1: Architecture overview and description
Part 2: Integration and mapping methodology (this Standard)

The terms 'normative' and 'informative' are used to define the application of the annex to which they apply. A normative annex is an integral part of a standard, whereas an informative annex is only for information and guidance.

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Reference to International Standard		*Australian Standard*	
ISO		AS	
10303-1	Industrial automation systems and integration—Product data representation and exchange—Part 1: Overview and fundamental principles	10303.1	Industrial automation systems and integration—Product data representation and exchange, Part 1: Overview and fundamental principles

CONTENTS

Page

1 Scope 1

2 Normative references 2

3 Terms, definitions, and abbreviations 2
3.1 Terms and definitions 2
3.2 Abbreviations 6

4 Usage scenarios 6
4.1 Integrating application models 6
4.2 Integrating application models with an integration model 7
4.3 Defining an application model and its mapping to an integration model 9
4.4 Integrating an application model with two or more integration models 10
4.5 Improving an integration model 11

5 Methods for integrating application models 12
5.1 Analysis of the requirements 13
5.1.1 Pre-conditions 13
5.1.2 Method description 13
5.1.3 Post-conditions 15
5.2 Defining and extending the integration model 15
5.2.1 Pre-conditions 16
5.2.2 Method description 16
5.2.3 Post-conditions 18
5.3 Identifying a subset of the integration model 19
5.4 Mapping between the application model and the identified integration model subset 19
5.4.1 Pre-conditions 20
5.4.2 Method description 21
5.4.3 Post-conditions 22

Annex A (normative) Information object registration 23

Annex B (informative) Description of the integration process 24

Annex C (informative) Checklist for integration and mapping processes 32

Annex D (informative) Technical discussions 38

Bibliography 41

Index 43

Figures

Figure 1 — Creating an integration model that integrates two application models 7
Figure 2 — Integrating an application model with an existing integration model 8
Figure 3 — Creating an application model and its mapping to an integration model 9
Figure 4 — Integrating an application model with more than one integration model 10
Figure 5 — Improving an integration model 11
Figure 6 — Alternative mappings to an improved integration model 12
Figure 7 — Analysis of application model 14
Figure 8 — Creating a new integration model 17
Figure 9 — Extending the integration model 17
Figure 10 — Identifying a subset of the integration model 19
Figure 11 — Mapping between the application model and the integration model subset 21
Figure B-1 — Integrate application model (A-0) 24

Page

Figure B-2 — Integrate application model (A0) 26
Figure B-3 — Analyze requirements (A1) 27
Figure B-4 — Create/extend integration model (A2) 29
Figure B-5 — Map application model to integration model subset (A4) 30
Figure D-1 — Relationship between a model and its subject 38

INTRODUCTION

0.1 Overview of ISO 18876

This Technical Specification establishes an architecture, a methodology, and other specifications for integrating industrial data for exchange, access and sharing. It supports:

— data sharing and data integration;

— specification of mappings between models;

— data transformation.

ISO/TS 18876-1 provides an overview of the architecture and methodology of this Technical Specification.

0.2 Organization of this part of ISO 18876

The organization of this part of ISO 18876 is as follows:

— clause 1 specifies the scope and field of application of this part of ISO 18876;

— clause 2 identifies additional standards that, through references in this part of ISO 18876, constitute provisions of this part of ISO 18876;

— clause 3 defines terms used in this part of ISO 18876;

— clause 4 describes a number of usage scenarios for the application of the methods defined in this part of ISO 18876;

— clause 5 specifies the methods for integrating application models, and is supported by a detailed activity model presented in Annex B.

The methods specified in clause 5 are independent of modelling languages, mapping languages, and particular integration models. Annex C provides a checklist that can be used to ensure that all required stages in the integration and mapping process have been followed.

0.3 Target Audiences

The target audience for this document is modellers, analysts, systems integrators, and systems developers with a need to integrate application models across a range of systems and/or enterprise functions. The target audience for the introduction to this document is technical managers responsible for integration projects with a need to assess the applicability of this standard.

0.4 Conventions

This part of ISO 18876 includes provisions that indicate requirements strictly to be followed in order to conform to the standard. Such provisions are indicated through the use of the words “shall” and “shall not”. This part of ISO 18876 also includes provisions that indicate that among several possibilities one is recommended as particularly suitable. Such provisions are indicated through the use of the words “should” and “should not”. Additional material that illustrates the provisions of this part of ISO 18876 is presented in the form of notes, examples, and in the informative annexes B, C, and D.

NOTES

AUSTRALIAN STANDARD

Industrial automation systems and integration — Integration of industrial data for exchange, access and sharing —

Part 2: Integration and mapping methodology

1 Scope

This Technical Specification establishes an architecture, a methodology, and other specifications for integrating industrial data for exchange, access and sharing. Together these support the following activities:

— integrating data which may be:

  — from different sources or with different model contexts,

  — described by different models, or

  — defined in different modelling languages;

— sharing data among applications through systems integration architectures;

— resolving conflict between models developed with different objectives;

— translating data between different encodings;

— translating models between different modelling languages.

This part of ISO 18876 specifies methods for the following:

— creating and extending integration models;

— evaluating and selecting an integration model that can integrate two or more application models;

— creating an application model that is a constrained subset of an integration model to support particular application domain requirements for exchange, sharing, or both;

— creating a mapping specification between an application model and an integration model.

The following are within the scope of this part of ISO 18876:

— modelling language independent methods for creating and extending an integration model;

— methods for integrating an application model with an integration model;

— mapping language independent methods for mapping an application model to an integration model;

— criteria for the selecting modelling languages and mapping languages that can be used within the specified methods for integration and mapping.

The following are outside the scope of this part of ISO 18876:

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