

Australian Standard™

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

**Part 2: Integration and mapping  
methodology**

This Australian Standard was prepared by Committee IT-006, Information Technology for Industrial Automation and Integration. It was approved on behalf of the Council of Standards Australia on 30 March 2004 and published on 3 June 2004.

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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)

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| <i>Reference to International Standard</i>   | <i>Australian Standard</i>  |
|--|---|
| 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 |

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## 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 Audience

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.

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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

### 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: