

Australian Standard™

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

**Part 1: Architecture overview and
description**

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 18876-1:2003, *Industrial automation systems and integration—Integration of industrial data for exchange, access and sharing, Part 1: Architecture overview and description*.

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 1 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 (this Standard)

Part 2: Integration and mapping methodology

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.

As this Standard is reproduced from an international standard, the following applies:

- (a) Its number appears on the cover and title page while the international standard number appears only on the cover.
- (b) In the source text ‘this International Standard’ should read ‘this Australian Standard’.
- (c) A full point substitutes for a comma when referring to a decimal marker.

References to International Standards should be replaced by references to Australian or Australian/New Zealand Standards, as follows:

<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 International Standard 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; and
- data transformation.

0.2 Organization of this part of ISO 18876

This part of ISO 18876 is organized as follows:

- Clause 1 specifies the scope and field of application of the International Standard and 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 and abbreviations used in this part of ISO 18876;
- Clause 4 describes the organization of this International Standard;
- Clause 5 describes the fundamental concepts and assumptions on which this International Standard is based;
- Clause 6 provides an overview of the model integration process;
- Clause 7 identifies some components of the integration architecture;
- Clause 8 provides an overview of the processes of data mapping and consolidation;
- Clause 9 summarizes the relationships with other standards.

0.3 Target audiences

The target audiences for this part of ISO 18876 are as follows:

- technical managers wishing to determine whether ISO 18876 is appropriate for their business needs;
- implementers wishing to obtain an overview of its contents.

AUSTRALIAN STANDARD

**Industrial automation systems and integration —
Integration of industrial data for exchange, access and
sharing —****Part 1:****Architecture overview and description****1 Scope**

This Technical Specification establishes an architecture, a methodology, and other specifications for integrating industrial data for exchange, access, and sharing. The following activities are supported:

- integrating data which may be:
 - from different sources or different 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.

The following are within the scope of ISO 18876:

- integration models;
- methods for creating, extending, and updating integration models;
- methods for creating a mapping specification to map data instances between an integration model and an application model that falls within its scope;
- encoding and decoding of data and models with different formats, such as SGML [1], XML [7], EXPRESS [3], UML [6] and ISO 10303-21 [4];
- methods for consolidating data sets from different sources and different models;
- modelling and mapping specification languages.

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

- the architecture and an outline of the methodology.

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

- integration models;