AS 10303.22—2000
ISO 10303-22:1998

Australian Standard™

Industrial automation systems and integration—Product data representation and exchange

Part 22: Implementation methods: Standard data access interface

This Australian Standard was prepared by Committee IT/6, Information Technology for Industrial Automation and Integration. It was approved on behalf of the Council of Standards Australia on 28 April 2000 and published on 8 June 2000.

The following interests are represented on Committee IT/6:

Australian Association of Consulting Engineers

Australian Electrical and Electronic Manufacturers Association

Australian Information Industry Association

CSIRO Centre for Planning and Design

CSIRO Manufacturing Science and Technology

Department of Defence (Australia)

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Part 22: Implementation methods: Standard data access interface

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PREFACE

This Standard was prepared by the Standards Australia Committee IT/6, Information Technology for Industrial Automation and Integration. This Standard is identical with and has been reproduced from ISO 10303-22:1998, *International automation systems and integration—Product data representation and exchange,* Part 22: *Implementation methods: Standard data access interface.*

The objective of this Standard is to provide designers of computer-interpretable representation and exchange of product data with a specification for the operations available to an application for the purposes of acquiring an manipulating data whose structure is defined by using Part 11 of this Standard.

This Standard is Part 22 of AS 10303, *Industrial automation systems and integration—Product data representation and exchange,* which is published in parts as follows:

Part 1: Overview and fundamental principles
Part 11: Description methods: The EXPRESS language reference manual
Part 12: Description methods: The EXPRESS-I language reference manual
Part 21: Implementation methods: Clear text encoding of the exchange structure
Part 22: Implementation methods: Standard data access interface (this Standard)
Part 31: Conformance testing methodology and framework: General concepts
Part 41: Integrated generic resources: Fundamentals of product description and support
Part 42: Integrated generic resources: Geometric and topological representation
Part 43: Integrated generic resources: Representation structures
Part 44: Integrated generic resources: Product structure configuration
Part 45: Integrated generic resources: Materials
Part 46: Integrated generic resources: Visual presentation
Part 47: Integrated generic resource: Shape variation tolerances
Part 49: Integrated generic resources: Process structure and properties
Part 101: Integrated application resources: Draughting
Part 105: Integrated application resource: Kinematics
Part 201: Application protocol: Explicit draughting
Part 202: Application protocol: Associative draughting
Part 203: Application protocol: Configuration controlled design
Part 203: Application protocol—Configuration controlled design (Amendment No.1)
Part 207: Application protocol: Sheet metal die planning and design
Part 224: Application protocol: Mechanical product definition for process planning using machining features

The terms ‘normative’ and ‘informative’ have been used in this Standard 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 does not appear on each page of text and its identity is shown only on the cover and title page.

(b) In the source text ‘this part of ISO 10303’ should read ‘this Australian Standard’.

(c) A full point should be substituted for a comma when referring to a decimal marker.

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

Reference to International Standard		*Australian or Australian/New Zealand Standard*	
ISO		AS/NZS	
8601	Data elements and interchange formats—Information interchange—Representation of dates and times	3802	Data elements and interchange formats—Information interchange—Representation of dates and times
		AS	
10303	Industrial automation systems and integration—Product data representation and exchange	10303	Industrial automation systems and integration—Product data representation and exchange
10303-1	Part 1: Overview and fundamental principles	10303.1	Part 1: Overview and fundamental principles
10303-11	Part 11: Description methods: The EXPRESS language reference manual	10303.11	Part 11: Description methods: The EXPRESS language reference manual
10303-21	Part 21: Implementation methods: Clear text encoding of the exchange structure	10303.21	Part 21: Implementation methods: Clear text encoding of the exchange structure
10303-31	Part 31: Conformance testing methodology and framework: General concepts	10303.31	Part 31: Conformance testing methodology and framework: General concepts
ISO/IEC		AS/NZS	
8824	Information technology—Abstract Syntax Notation One (ASN.1)	8824	Information technology—Abstract Syntax Notation One (ASN.1)
8824-1	Part 1: Specification of basic notation	8824.1	Part 1: Specification of basic notation

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AUSTRALIAN STANDARD

International automation systems and integration – Product data representation and exchange – Part 22: Implementation methods: Standard data access interface

1 Scope

This part of ISO 10303 specifies the functional characteristics of a data access interface. This interface is referred to as the standard data access interface (SDAI). The SDAI specifies the operations available to an application for the purposes of acquiring and manipulating data whose structure is defined using ISO 10303-11 (EXPRESS).

The SDAI is specified in terms independent of any computing language or system. The specification of the functionality defined by the SDAI in a particular computing language is referred to as an SDAI language binding. SDAI language bindings are specified as companion documents within the implementation methods series of ISO 10303.

The following are within the scope of this part of ISO 10303:

— access to and manipulation of instances of entities described using the EXPRESS data specification language;

— access to multiple data repositories by a single application at the same time;

— capabilities for an application to organize operations into groups whose effect can be saved or cancelled at the discretion of the application;

— access to a dictionary describing the data elements that can be manipulated by an application;

— ability to invoke the validation of the constraints specified using EXPRESS at the discretion of the application;

— support for managing the dependency relationships between entity instances;

— capabilities to describe logical collections of entity instances that define the population over which entity instance to entity instance references are allowed;

— capabilities to describe logical collections of entity instances that define the population over which global rules are validated;

— support for the use of data created within the context of one schema in the context of another schema.