Australian Standard™

Information technology—Metadata registries (MDR)

Part 3: Registry metamodel and basic attributes

STANDARDS AUSTRALIA

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Information technology—Meta data registries (MDR)

Part 3: Registry metamodel and basic attributes

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PREFACE

This Standard was prepared by the Standards Australia Committee IT-027, Data Management and Interchange.

This Standard is identical with, and has been reproduced from, ISO/IEC 11179-3:2003, *Information technology—Metadata registries (MDR)*—Part 3: *Registry metamodel and basic attributes*.

The objective of this Standard is to define metadata registries to facilitate electronic data interchange and data sharing for use by electronic commerce and database designers.

This Standard is Part 3 of AS 11179, *Information technology—Metadata registries (MDR)*, which is published in parts as follows:

Part 1: Framework
Part 2: Classification for data elements
Part 3: Registry metamodel and basic attributes (this standard)
Part 4: Formulation of data definitions
Part 5: Naming and identification principles for data elements
Part 6: Registration

The term 'informative' has been used in this Standard to define the application of the appendix to which it applies. An 'informative' appendix 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 part of ISO/IEC 11179' 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:

Reference to International Standard		*Australian or Australian/New Zealand Standard*	
ISO		AS	
31	Quantities and units	2900	Quantities and units
31-0	Part 0: General principles	2900.0	Part 0: General principles
3166	Codes for the representation of names of countries and their subdivisions	2632	Codes for the representation of names of countries and their subdivisions
3166-1	Part 1: Country codes	2632.1	Part 1: Country codes
		AS/NZS ISO	
5127	Information and documentation—Vocabulary	5127	Information and documentation—Vocabulary
		AS ISO	
8601	Data elements and interchange formats—Information exchange—Representation of dates and times	8601	Data elements and interchange formats—Information exchange—Representation of dates and times

ISO/IEC		AS ISO/IEC	
6523	Information technology—Structure for the identification of organization and organization parts	6523	Information technology—Structure for the identification of organization and organization parts
6523-1	Part 1: Identification of organization identification schemes	6523.1	Part 1: Identification of organization identification schemes
6523-2	Part 2: Registration of organization identification schemes	6523.2	Part 2: Registration of organization identification schemes
11179	Information technology—Metadata registries (MDR)	11179	Information technology—Metadata registries (MDR)
11179-1	Part 1: Framework	11179.1	Part 1: Framework
11179-2	Part 2: Classification for data elements	11179.2	Part 2: Classification for data elements
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Only referenced documents that have been adopted as Australian or Australian/New Zealand Standards have been listed.

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INTRODUCTION

Data processing and electronic data interchange rely heavily on accurate, reliable, controllable and verifiable data recorded in databases. A prerequisite for correct and proper use and interpretation of data is that both users and owners of data have a common understanding of the meaning and representation of the data. To facilitate this common understanding, a number of characteristics, or attributes, of the data have to be defined. These characteristics of data are known as "metadata", that is, "data that describes data". This part of ISO/IEC 11179 provides for the attributes of data elements and associated metadata to be specified and registered as metadata items in a *Metadata Registry*.

The structure of a *Metadata Registry* is specified in the form of a conceptual data model. The *Metadata Registry* is used to keep information about data elements and associated concepts, such as "data element concepts", "conceptual domains" and "value domains". Generically, these are all referred to as "metadata items". Such metadata are necessary to clearly describe, record, analyse, classify and administer data.

When considering data and metadata, it is important to distinguish between types of data/metadata, and instances of these types. Clause 4 of this part of ISO/IEC 11179 specifies the types of metadata objects that form the structure of a *Metadata Registry*. A *Metadata Registry* will be populated with instances of these metadata objects (metadata items), which in turn define types of data, e.g. in an application database. In other words, instances of metadata specify types of application level data. In turn, the application database will be populated by the real world data as instances of those defined data types.

NOTE ISO/IEC 10027:1990 IRDS Framework explains the concept of different levels of modelling.

This part of ISO/IEC 11179 also describes the basic attributes of metadata items for purposes where a complete *Metadata Registry* is not appropriate.

This part of ISO/IEC 11179 is of interest to information developers, information managers, data administrators, standards developers and others who are responsible for making data understandable and shareable. ISO/IEC 11179 has broad applicability across subject area domains and information technologies.

NOTES

AUSTRALIAN STANDARD

Information technology—Metadata registries (MDR)

Part 3:
Registry metamodel and basic attributes

1 Scope

The primary purpose of ISO/IEC 11179-3 is to specify the structure of a *Metadata Registry* (see 1.1). ISO/IEC 11179-3 also specifies basic attributes which are required to describe metadata items, and which may be used in situations where a complete metadata registry is not appropriate (e.g. in the specification of other International Standards) (see 1.2).

1.3 identifies aspects not currently addressed.

1.4 provides examples of activities where ISO/IEC 11179-3 may be applied.

1.1 Scope – Structure of a Metadata Registry

A comprehensive *Metadata Registry* management function requires a set of rules and procedures. These rules and procedures are set out in the following Clauses and Annexes and are complemented elsewhere in this document as follows:

a) the definitions of metadata objects are in Clause 3.3 of this part of ISO/IEC 11179;

b) the structure of the registry in the form of a conceptual data model is in Clause 4 of this part of ISO/IEC 11179;

Aspects of the registry are expanded on in other parts of ISO/IEC 11179, as follows:

a) the overall framework for this family of International Standards is specified in ISO/IEC 11179-1;

b) rules and guidelines for classifying metadata are in ISO/IEC 11179-2;

c) rules and guidelines for the formulation of definitions are in ISO/IEC 11179-4;

d) naming and identifying principles for metadata are in ISO/IEC 11179-5;

e) rules and guidelines for registering metadata are in ISO/IEC 11179-6.

While the model diagrams are presented in UML notation, this part of ISO/IEC 11179 does not assume nor endorse any specific system environment, database management system, database design paradigm, system development methodology, data definition language, command language, system interface, user interface, computing platform, or any technology required for implementation. This part of ISO/IEC 11179 does not directly apply to the actual use of data in communications and information processing systems.