American National Standard

INCITS/ISO/IEC 11179-2:2005[2009]
(ISO/IEC 11179-2:2005, IDT)

Information technology — Metadata registries (MDR) — Part 2: Classification

Developed by

Where IT all begins

PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

Adopted by INCITS (InterNational Committee for Information Technology Standards) as an American National Standard.

Date of ANSI Approval: 3/23/2009

Published by American National Standards Institute,
25 West 43rd Street, New York, New York 10036

Second edition
2005-11-15

Information technology — Metadata registries (MDR) —

Part 2: Classification

Technologies de l'information — Registres de métadonnées (RM) —

Partie 2: Classification

Reference number
ISO/IEC 11179-2:2005(E)

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

ISO/IEC 11179-2 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 32, *Data management and interchange*.

This second edition cancels and replaces the first edition (ISO/IEC 11179-2:2000), in order to harmonize with ISO/IEC 11179-3:2003. All normative material in ISO/IEC 11179-2:2000, including the attributes and model of a classification scheme, have been modified and included in ISO/IEC 11179-3:2003. This second edition of ISO/IEC 11179-2 contains some minor elaboration of ISO/IEC 11179-3:2003, 4.10 (Classification Region).

ISO/IEC 11179 consists of the following parts, under the general title *Information technology — Metadata registries (MDR)*:

— *Part 1: Framework*

— *Part 2: Classification*

— *Part 3: Registry metamodel and basic attributes*

— *Part 4: Formulation of data definitions*

— *Part 5: Naming and identification principles*

— *Part 6: Registration*

Introduction

This part of ISO/IEC 11179 focuses on the part of the metadata registry (MDR) model called the *classification region* (ISO/IEC 11179-3, 4.10). The classification region permits the registration and administration of all or part of a *classification scheme*. Optionally, a classification scheme may be used to classify *administered items*, the registered artifacts in a metadata registry.

There are many efforts underway to devise classification schemes and to use the schemes to build and populate classification structures. For the purpose of this part of ISO/IEC 11179, the following are all considered types of classification schemes of varying discriminatory power: key words, thesauri, taxonomies, and ontologies. These classification schemes have potentially great utility for documenting objects in the real world, including administered items in an MDR.

There are several purposes for applying classification to real world objects. Classification assists users to find a single object from among a large collection of objects, facilitates the administration and analysis of a collection of objects, and, through inheritance, conveys semantic content that is often only incompletely specified by other attributes, such as names and definitions.

When applied to classifying administered items in an MDR, the classification schemes accommodated in this part of ISO/IEC 11179 have utility for

- deriving and formulating abstract and application administered items;
- ensuring appropriate attribute and attribute-value inheritance;
- deriving names from a controlled vocabulary;
- disambiguating;
- recognizing superordinate, coordinate, and subordinate administered item concepts;
- recognizing relationships among administered items;
- assisting in the development of modularly designed names and definitions.

The preparation of ISO/IEC 11179 has also been prompted by the need for standardized data design procedures that will ensure the emergence of data elements capable of supporting electronic data interchange.

Each type of classification scheme mentioned above has particular strengths and weaknesses, and provides the foundation upon which particular capabilities can be built. Keywords, for example, are a quick way to provide users some assistance in locating potentially useful administered items. A thesaurus provides a more structured approach, arranging descriptive terms in a structure of broader, narrower, and related classification categories. A taxonomy provides a classification structure that adds the power of inheritance of meaning from generalized taxa to specialized taxa. Ontologies, with associated epistemologies, can provide rich, rigorously defined structures (e.g. directed acyclic graphs with multiple inheritance) that can convey information needed by software, such as intelligent agents and mediators that are useful in the provision of intelligent information services.