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Information technology — Metadata Registries Interoperability and Bindings (MDR-IB) —

Part 1:
Framework, common vocabulary, and common provisions for conformance

Technologies de l'information — Interopérabilité et liaisons des registres de métadonnées (MDR-IB) —

Partie 1: Cadre d'applications, vocabulaire commun et dispositions communes de conformité

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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.

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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.

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ISO/IEC 20944 consists of the following parts, under the general title *Information technology — Metadata Registries Interoperability and Bindings (MDR-IB)*:

— *Part 1: Framework, common vocabulary, and common provisions for conformance*

— *Part 2: Coding bindings*

— *Part 3: API bindings*

— *Part 4: Protocol bindings*

— *Part 5: Profiles*

Introduction

ISO/IEC 20944 provides the bindings and their interoperability for metadata registries, such as those specified in ISO/IEC 11179.

This part of ISO/IEC 20944 contains an overview, framework, common vocabulary, and common provisions for conformance for ISO/IEC 20944. In the context of increasing metadata and data interoperability harmonization, four methodologies have been employed to simplify the tasks and to reduce risk.

The first methodology employed is the treating of data (and metadata) interoperability as a series of layered technical specifications (e.g., standards), from application-independent layers to application-specific layer(s).

The second methodology employed is the simplification of interoperability specializations, also known as bindings. Rather than independently developing each separate method of representation and access [codings, application programming interfaces (APIs), protocols], a common, harmonized approach is taken where each binding is derived in a consistent two-step process:

— Step #1 is choosing from the categories of coding, API, protocol (or combination), which themselves are derived from a common data model and navigation method.

— Step #2 is to derive the specific binding from its general binding, e.g., the XML coding binding (ISO/IEC 20944-2:2012, Clause 12) and other (specific) coding bindings are derived from the generic coding binding (ISO/IEC 20944-2:2012, Clauses 1-10); the C API binding (ISO/IEC 20944-3:2012, Clause 11), the Java API binding (ISO/IEC 20944-3:2012, Clause 12), and the other API bindings are derived from the generic API binding (ISO/IEC 20944-3:2012, Clauses 1-10). Because these bindings have a well-defined derivation, the bindings are harmonized, i.e., there is commonality in meaning and interpretation across the bindings. Thus, the complexity of adding and harmonizing a new (coding, API, protocol) binding is greatly simplified.

The third methodology employed is the use of rule-based bindings to simplify the normative wording of the standards. A rule-based binding is a binding that is specified by a general set of rules (in contrast to application-specific normative wording). For example, the XML coding binding is based upon a set of transformation rules (in contrast to specifying a specific DTD or XML schema).

The fourth methodology involves the harmonization of bindings within a category. For example, the XML coding binding is intended to be harmonized with the ASN.1 coding binding; the C API binding is intended to be harmonized with the Java API binding, etc.