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

**Part 3:
API bindings**

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

Partie 3: Liaisons API



COPYRIGHT PROTECTED DOCUMENT

© ISO/IEC 2013

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

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	v
Introduction.....	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Intended use of this part of ISO/IEC 20944	1
5 Abstract model	2
5.1 General	2
5.2 Session paradigm.....	2
5.3 Security framework	3
5.4 Hierarchical navigation paths	3
6 Services	4
6.1 Use of ISO/IEC 13886	4
6.2 Session establishment services	4
6.3 Session parameter services	8
6.4 Security services	9
6.5 Data transfer services	11
6.6 Miscellaneous	21
7 Bindings	26
8 Administration	26
9 Conformance	26
9.1 API conformance paradigm.....	26
9.2 API application.....	26
9.3 API environment	26
9.4 Conformance labels	27
10 Reserved for future standardization.....	27
11 C API binding	27
11.1 Datatype mapping	27
11.2 Function parameter mapping	28
11.3 Function return mapping	28
11.4 Function exception mapping	28
11.5 Procedure call signatures	28
11.6 Error/exception returns.....	36
11.7 Conformance label prefix	37
12 Java API binding.....	37
12.1 Datatype mapping	37
12.2 Function parameter mapping	37
12.3 Function return mapping	38
12.4 Function exception mapping	38
12.5 Procedure call signatures	38
12.6 Error/exception returns.....	44
12.7 Conformance label prefix	45
13 ECMAScript API binding.....	45
13.1 Datatype mapping	45
13.2 Function parameter mapping	45

13.3	Function return mapping	46
13.4	Function exception mapping	46
13.5	Procedure call signatures	46
13.6	Error/exception returns	54
13.7	Conformance label prefix	54
	Bibliography	55

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 20944-3 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 32, *Data management and interchange*.

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

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

This part of ISO/IEC 20944 contains provisions that are common to API bindings (Clauses 4-10) and the API bindings themselves (Clause 11 onward). The API bindings have commonality in their conceptualization of the services provided. For example, common features include:

- using a session paradigm to access data;
- using a parameterized security framework to support a variety of security techniques;
- using a hierarchical navigation for data access.

Clause 11 and onward are the actual API bindings themselves. The clauses of this part of ISO/IEC 20944 are organized such that future amendments are possible, which would include additional API bindings.

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

Part 3: API bindings

1 Scope

The ISO/IEC 20944 series of International Standards describes codings, application programming interfaces (APIs), and protocols for interacting with an ISO/IEC 11179 metadata registry (MDR).

This part of ISO/IEC 20944 specifies provisions that are common across API bindings for the ISO/IEC 20944 series of International Standards, and provides the individual API bindings themselves.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 9899:1999, *Programming languages — C*

ISO/IEC 11404:2007, *Information technology — General-Purpose Datatypes (GPD)*

ISO/IEC 13886:1996, *Information technology — Language-Independent Procedure Calling (LIPC)*

ISO/IEC 16262, *Information technology — Programming languages, their environments and system software interfaces — ECMAScript language specification*

ISO/IEC 20944-1:2013, *Information technology — Metadata Registries Interoperability and Bindings (MDR-IB) — Part 1: Framework, common vocabulary, and common provisions for conformance*

IETF RFC 3986, *Uniform Resource Identifier (URI): Generic Syntax*, January 2005