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**Information technology —
Metadata Interoperability and Bindings (MDIB) —
Part 43: Java API binding**

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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ISO/IEC 20944-43 was prepared by Technical Committee ISO/IEC JTC1, *Information Technology*, Subcommittee SC32, *Data Management and Interchange*.

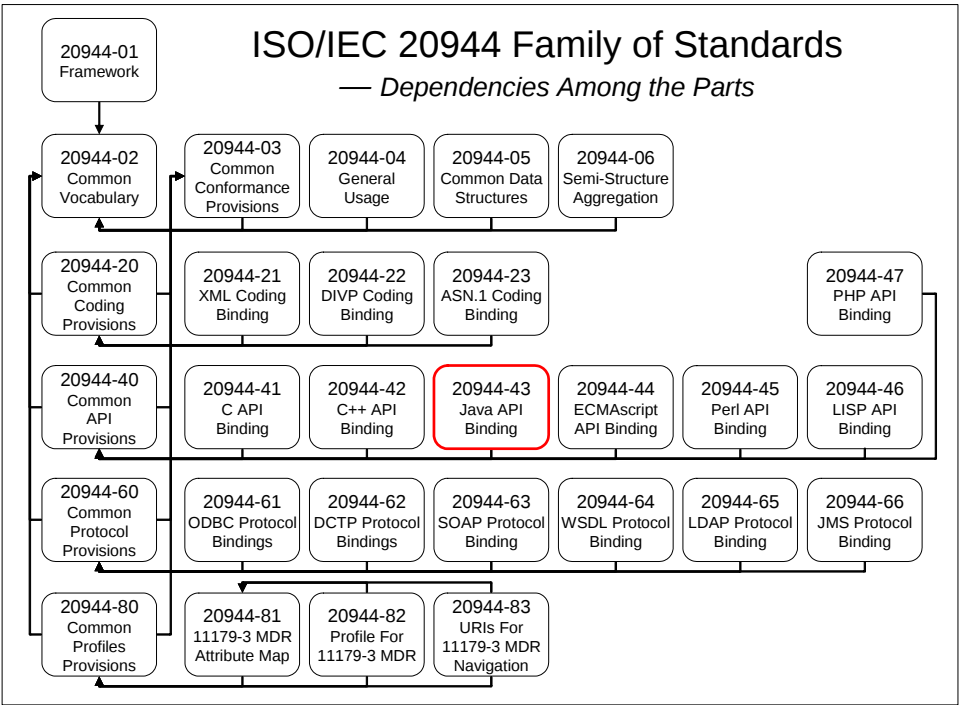
ISO/IEC 20944 consists of the following parts, under the general title *Information technology — Metadata Interoperability and Bindings (MDIB)*:

- *Part 01: Framework*
- *Part 02: Common vocabulary*
- *Part 03: Common provisions for conformance*
- *Part 04: Generic usage*
- *Part 05: Common data structures and services*
- *Part 06: Semi-structured aggregation*
- *Part 20: Common provisions for coding bindings*
- *Part 21: XML coding binding*
- *Part 22: DIVP coding binding*
- *Part 23: ASN.1 coding binding*
- *Part 40: Common provisions for application programming interface (API) bindings*
- *Part 41: C API binding*

- *Part 42: C++ API binding*
- *Part 43: Java API binding*
- *Part 44: ECMAScript API binding*
- *Part 45: Perl binding*
- *Part 46: LISP binding*
- *Part 47: PHP binding*
- *Part 60: Common provisions for protocol bindings*
- *Part 61: ODBC protocol binding*
- *Part 62: DCTP protocol binding*
- *Part 63: SOAP protocol binding*
- *Part 64: WSDL protocol binding*
- *Part 65: LDAP protocol binding*
- *Part 66: JMS protocol binding*
- *Part 80: Common provisions for profiles*
- *Part 81: Attribute mapping for 11179-3 metadata registry metamodel*
- *Part 82: Profile for 11179-3 metadata registry metamodel*
- *Part 83: Uniform Resource Identifier (URI) suffixes for 11179-3 metadata registry metamodel navigation*

Introduction

The following diagram shows the organization of the ISO/IEC 20944 family of standards with this Part highlighted.



Organization of ISO/IEC 20944 family of standards.

This Part of ISO/IEC 20944 specifies the Java API binding, based upon the common API binding specified in Part 40.

Information technology — Metadata Interoperability and Bindings (MDIB) — Part 43: Java API binding

Editor's Note: Each part of 20944 is marked with a common sequence number ("[Release Sequence #N]") to indicate they are synchronized and harmonized among themselves. The mark "[Release Sequence #N]" does not imply that there are a complete set of N-1 prior drafts for any particular Part.

1 Scope

This Part of this International Standard specifies the Java programming language API binding for the 20944 family of standards.

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 20944-02:—¹, *Information technology — Metadata Interoperability and Bindings (MDIB) — Common vocabulary*²

ISO/IEC 20944-40:—³, *Information technology — Metadata Interoperability and Bindings (MDIB) — Common provisions for application programming interface (API) bindings*

¹ To be published.

² The international standards, technical reports, and drafts of the 11179, 20943, and 20944 series are available at
<http://metadata-standards.org/11179>
<http://metadata-standards.org/20943>
<http://metadata-standards.org/20944>

³ To be published.

3 Terms and definitions

The 20944 family of standards consolidates its terminology into a single part. The terminology of Part 02 is included via normative reference.

3.1

referenced data interchange specification

data model that is being used for a defined interoperability binding

NOTE The term *referenced data interchange specification*, defined in 20944-02, is used throughout the 20944 family of standards to reference the data model that is being used for the bindings. The *referenced data interchange specification* is tied to the bindings via normative reference, e.g., some other standard defines a data model and uses 20944, via normative reference, to provide some coding, API, or protocol bindings. For Part 82, the *referenced data interchange specification* refers to the 11179-3 metamodel. Part 04 of this International Standard, explains how other standards and specifications may use or re-use portions of the 20944 family of standards.

4 API mapping

The binding-independent API of Part 40 is mapped to the Java programming language according to the following rules. The API services are methods of the `mdib_handle` class.

4.1 Datatype mapping

The datatypes of Part 40 are mapped as follows:

Part 40: Binding-Independent	Part 43: Java API Binding
<code>mdib_handle</code>	<code>mdib_handle</code>
<code>characterstring</code>	<code>String</code>
<code>pointer</code>	<code>reference</code>
<code>str8</code>	<code>String</code>
<code>str16</code>	<code>String</code>
<code>str32</code>	--
<code>int8, uint8, int16, uint16, int32, uint32, int64, uin64, int128, uint128</code>	<code>byte, --, short, --, int, --, long, --, --, --</code>
<code>real32, real64, real80</code>	<code>float, double, --</code>
<code>procedure</code>	--

4.2 Function parameter mapping

The parameters of Part 40 are the same as the parameters for this Part.

4.3 Function return mapping

The return values of Part 40 are mapped as follows:

Part 40: Binding-Independent	Part 43: Java API Binding
state(success,failure)	int, success=0, failure=-1
characterstring	String
str8	String
str16	String
str32	String
int8, uint8, int16, uint16, int32, uint32, int64, uint64, int128, uint128	byte, --, short, --, int, --, long, --, --, --
real32, real64, real80	float, double, --

4.4 Function exception mapping

The function exceptions of Part 40 are mapped as follows:

Part 40: Binding-Independent	Part 43: Java API Binding
bad_conversion	exception thrown

5 Procedure call signatures

5.1 Session establishment services

5.1.1 Connect

Synopsis

```
mdib_handle mdib_connect
(
    String target, // repository to connect to
    String options // connect options
)
```

5.1.2 Disconnect

Synopsis

```
int mdib_disconnect
(
    mdib_handle session // session handle
)
```

5.1.3 Open

Synopsis

```
mdib_handle mdib_open
(
    mdib_handle session, // session handle
    String node, // portion of repository to open
    String options // connect options
)
```

5.1.4 Close

Synopsis

```
int mdib_close
(
    mdib_handle session // session handle
)
```

5.2 Session parameter services

5.2.1 Get path

Synopsis

```
String mdib_get_path
(
    mdib_handle session // session handle
)
```

5.3 Security services

5.3.1 Request Authorization/Authentication

Synopsis

```
int mdib_request_auth
(
    mdib_handle session, // session handle
    String auth_type, // auth type
    String auth_options // auth options
)
```

5.3.2 Response Authorization/Authentication

Synopsis

```

int mdib_response_auth
(
    mdib_handle session, // session handle
    String auth_type, // auth type
    // auth_handler() // auth handler function (exception thrown)
)

```

5.4 Data transfer services

5.4.1 Get value

Synopsis

```

int mdib_get_value
(
    mdib_handle session, // [in] session handle
    String src_identifier, // [in] src object name
    String dst_label_type, // [in] saved label: typeof
    mdib_object dst_label_ptr, // [out] saved label: ptr to
    String dst_type_type, // [in] saved type: typeof
    mdib_object dst_type_ptr, // [out] saved type: ptr to
    String dst_object_type, // [in] saved value: typeof
    mdib_object dst_object_ptr, // [out] saved value: ptr to
    String dst_proplist_type, // [in] saved proplist: typeof
    mdib_object dst_proplist_ptr, // [out] saved proplist: ptr to
)

```

5.4.2 Typed get value

Synopsis

```

String mdib_get_value_as_str8
(
    mdib_handle session, // [in] session handle
    String src_identifier // [in] src object name
)

String mdib_get_value_as_str16
(
    mdib_handle session, // [in] session handle
    String src_identifier // [in] src object name
)

byte mdib_get_value_as_int8
(
    mdib_handle session, // [in] session handle
    String src_identifier // [in] src object name
)

short mdib_get_value_as_int16
(
    mdib_handle session, // [in] session handle
    String src_identifier // [in] src object name
)

```

```

int mdib_get_value_as_int32
(
    mdib_handle session, // [in] session handle
    String src_identifier // [in] src object name
)

long mdib_get_value_as_int64
(
    mdib_handle session, // [in] session handle
    String src_identifier // [in] src object name
)

float mdib_get_value_as_real32
(
    mdib_handle session, // [in] session handle
    String src_identifier // [in] src object name
)

double mdib_get_value_as_real64
(
    mdib_handle session, // [in] session handle
    String src_identifier // [in] src object name
)

```

5.4.3 Put value

Synopsis

```

int mdib_put_value
(
    mdib_handle session, // [in] session handle
    String src_identifier, // [in] src object name
    String src_label_type, // [in] assigned label: typeof
    mdib_object src_label_ptr, // [in] assigned label: ptr to
    String src_type_type, // [in] assigned type: typeof
    mdib_object src_type_ptr, // [in] assigned type: ptr to
    String src_object_type, // [in] assigned value: typeof
    mdib_object src_object_ptr, // [in] assigned value: ptr to
    String src_proplist_type, // [in] assigned proplist: typeof
    mdib_object src_proplist_ptr, // [in] assigned proplist: ptr to
)

```

5.4.4 Typed put value

Synopsis

```

int mdib_put_value_as_str8
(
    mdib_handle session, // [in] session handle
    String dst_identifier, // [in] dst object name
    String src_value // [in] src value
)

```

```

int mdib_put_value_as_str16
(
    mdib_handle session, // [in] session handle
    String dst_identifier, // [in] dst object name
    String src_value // [in] src value
)

int mdib_put_value_as_int8
(
    mdib_handle session, // [in] session handle
    String dst_identifier, // [in] dst object name
    byte src_value // [in] src value
)

int mdib_put_value_as_int16
(
    mdib_handle session, // [in] session handle
    String dst_identifier, // [in] dst object name
    short src_value // [in] src value
)

int mdib_put_value_as_int32
(
    mdib_handle session, // [in] session handle
    String dst_identifier, // [in] dst object name
    int src_value // [in] src value
)

int mdib_put_value_as_int64
(
    mdib_handle session, // [in] session handle
    String dst_identifier, // [in] dst object name
    long src_value // [in] src value
)

int mdib_put_value_as_real32
(
    mdib_handle session, // [in] session handle
    String dst_identifier, // [in] dst object name
    float src_value // [in] src value
)

int mdib_put_value_as_real64
(
    mdib_handle session, // [in] session handle
    String dst_identifier, // [in] dst object name
    double src_value // [in] src value
)

```

5.5 Miscellaneous

5.5.1 Make Object message

Synopsis

```
integer mdib_make_object
(
    mdib_handle session, // [in] session handle
    String src_identifier, // [in] src object name
    String src_label_type, // [in] assigned label: typeof
    mdib_object src_label_ptr, // [in] assigned label: ptr to
    String src_type_type, // [in] assigned type: typeof
    mdib_object src_type_ptr, // [in] assigned type: ptr to
    String src_object_type, // [in] assigned value: typeof
    mdib_object src_object_ptr, // [in] assigned value: ptr to
    String src_proplist_type, // [in] assigned proplist: typeof
    mdib_object src_proplist_ptr, // [in] assigned proplist: ptr to
)
```

5.5.2 Remove Object message

Synopsis

```
integer mdib_remove_object
(
    mdib_handle session, // [in] session handle
    String src_identifier, // [in] src object name
)
```

5.5.3 Link Object message

Synopsis

```
integer mdib_link_object
(
    mdib_handle session, // [in] session handle
    String src_identifier, // [in] src object name
    String dst_identifier, // [in] dst object name
    String link_type // [in] link type: soft, hard
)
```

5.5.4 List Object message

Synopsis

```
string mdib_list_object
(
    mdib_handle session, // [in] session handle
    String src_identifier // [in] src object name (wildcard)
)
```

6 Conformance

A conforming implementation shall conform to:

- the requirements of ISO/IEC 20944-03
- the requirements of ISO/IEC 20944-40
- the requirements of this Part