



BSI Standards Publication

Information technology — Metamodel framework for interoperability (MFI)

Part 10: Core model and basic mapping

National foreword

This British Standard is the UK implementation of [ISO/IEC 19763-10:2023](#). It supersedes [BS ISO/IEC 19763-10:2014](#), which is withdrawn.

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Information technology — Metamodel framework for interoperability (MFI) —

Part 10: Core model and basic mapping

*Technologies de l'information — Cadre du métamodèle pour
l'interopérabilité (MFI) —*

Partie 10: Modèle de base et de cartographie de base



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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives or www.iec.ch/members_experts/refdocs).

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This document 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 19763-10:2014](http://www.iso.org/standards/std/19763-10/19763-10_2014.html)), which has been technically revised.

The main changes are as follows.

- The Core Model has been revised to extend the facilities provided by [ISO/IEC 11179-3](http://www.iso.org/standards/std/11179-3/11179-3_2023.html) *Information technology — Metadata registries (MDR) — Part 3: Metamodel for registry common facilities* (part of the fourth edition of [ISO/IEC 11179](http://www.iso.org/standards/std/11179/11179_2019.html)) to allow models to be registered in a metadata registry. The previous edition of [ISO/IEC 11179-3](http://www.iso.org/standards/std/11179-3/11179-3_2019.html) has been modularized and technically revised.
- The Basic Mapping facility has been removed as an extended mapping facility is provided by [ISO/IEC 11179-3:2023](http://www.iso.org/standards/std/11179-3/11179-3_2023.html), Clause 11.

A list of all parts in the [ISO/IEC 19763](http://www.iso.org/standards/std/19763/19763_2023.html) series can be found on the ISO and IEC websites.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html and www.iec.ch/national-committees.

Introduction

Industrial consortia have engaged in the standardization of domain-specific business objects including business process models and software components using common modelling facilities and interchange facilities such as UML¹⁾ and XML. They are very active in standardizing domain-specific business process models and standard modelling constructs such as data elements, entity profiles and value domains.

However, to promote interoperability across business domains, a generic framework for registering a variety of models and the mapping between them is required. This document provides a core metamodel as the basis for the other parts of the [ISO/IEC 19763](#) series. The primary purpose of the multipart standard [ISO/IEC 19763](#) is to specify a metamodel framework for interoperability.

The model registries specified in this document and the other parts of the [ISO/IEC 19763](#) series utilise the common facilities specified in [ISO/IEC 11179-3](#). The [ISO/IEC 11179](#) series of standards specify a Metadata Registry (MDR). These common facilities provide the ability to identify and register models and their associated model elements and modelling languages within a metadata registry used to register models.

[Figure 1](#) shows the relationship between this document and the other parts of the [ISO/IEC 19763](#) series.

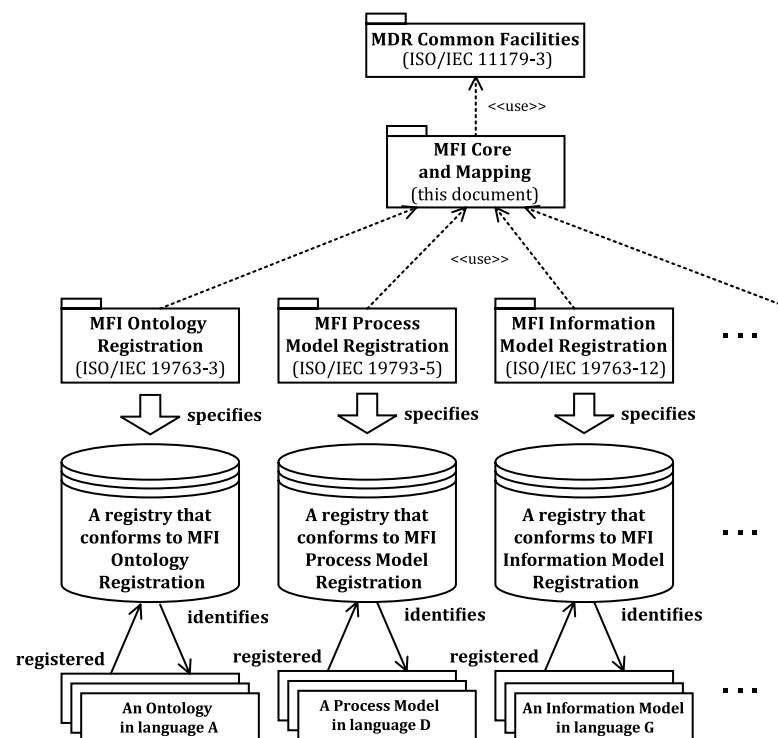


Figure 1 — Relationships between this document and other documents of the ISO/IEC 19763 series

To maintain compatibility with the [ISO/IEC 11179](#) series, this document uses bold font to highlight metamodel constructs in [Clauses 6](#) and [8](#), both for those constructs specified in this document and for those constructs specified in [ISO/IEC 11179-3](#).

1) UML is a trademark of the Object Management Group. This information is given for the convenience of users of this document and does not constitute an endorsement by ISO or IEC of the product named.

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Information technology — Metamodel framework for interoperability (MFI) —

Part 10: Core model and basic mapping

1 Scope

This document specifies the metamodel that provides a facility to register administrative information and common semantics of models.

This document does not specify the metamodel of models in a specific language, but provides a common core metamodel for the other parts of the [ISO/IEC 19763](#) series, each of which specifies a metamodel for a registry that can register models of a specific type, such as ontologies, process models or information models, in a number of different languages.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 11179-3:2023](#), *Information technology — Metadata registries (MDR) — Part 3: Metamodel for registry common facilities*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in [ISO/IEC 11179-3](#) and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1 model

representation of some aspect of a domain of interest using a normative modelling facility and modelling constructs

Note 1 to entry: models can be used to express a set of information requirements, processes, services, roles, goals or some other aspect of a domain of interest

[SOURCE: ISO/IEC 19763-1:2023, 3.1]

3.2 model element

element or component in a *model* ([3.1](#))

Note 1 to entry: Examples of model elements are a representation of an entity type in an information model, a representation of an event in a process model, a representation of a service operation in a service model, or a representation of an actor in a role and goal model.

[SOURCE: ISO/IEC 19763-1:2023, 3.2]

3.3 modelling language

language or notation that is used to express a *model* ([3.1](#)) of some aspect of a domain of interest

[SOURCE: ISO/IEC 19763-1:2023, 3.3 modified — notes deleted]

3.4 concept

unit of knowledge created by a unique combination of characteristics

Note 1 to entry: Concepts are not necessarily bound to particular natural languages. They are, however, influenced by the social or cultural background which often leads to different categorizations.

Note 2 to entry: A concept is independent of its representation.

[SOURCE: ISO/IEC 11179-3:2023, 3.2.7]

4 Abbreviated terms

MDR	Metadata registry
MFI	Metamodel framework for interoperability

5 Conformance

5.1 General

An implementation claiming conformance to this part of [ISO/IEC 19763](#) shall conform as further described in this clause.

5.2 Conformance levels

5.2.1 Conformance Level 1

The implementation supports the metamodel specified in [6.3](#) in addition to all provisions of the Basic Registry profile of [ISO/IEC 11179-3:2023](#), 4.4.2.

5.2.2 Conformance Level 2

The implementation supports the metamodel specified in [6.3](#) in addition to all provisions of the Basic Registry with Mapping profile of [ISO/IEC 11179-3:2023](#), 4.4.2.

5.3 Implementation Conformance Statement (ICS)

An implementation claiming conformance to this part of [ISO/IEC 19763](#) shall include an Implementation Conformance Statement stating which conformance level it claims (see [5.2](#)).

NOTE Other parts of the [ISO/IEC 19763](#) series will require a conformance to this document as a part of its conformance claim.

5.4 Conformance labels

Conformance to the levels specified in [5.2](#) may be claimed using the following labels, respectively:

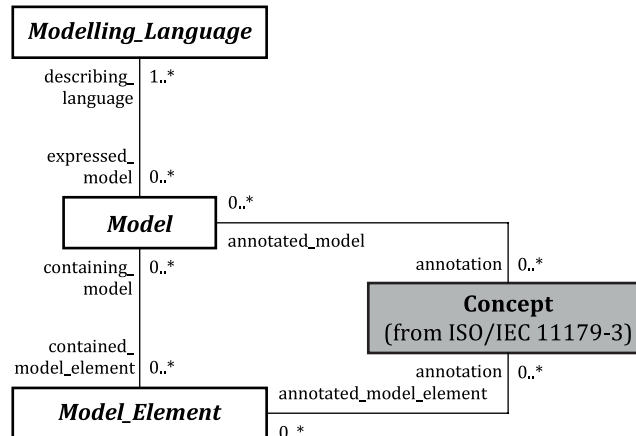
— [ISO/IEC 19763-10:2023](#) Core Model Registry;

— [ISO/IEC 19763-10:2023](#) Core Model Registry with mapping.

6 Core Model

6.1 Overview of the Core Model

The metamodel of the Core Model package specifies a model that is inherited by other parts of [ISO/IEC 19763](#) to register administrative information and common semantics of models. [Figure 2](#) shows this metamodel.



NOTE 1 Classes whose names are italicized are abstract classes.

NOTE 2 Classes which are grey shaded are classes that are defined in other documents.

Figure 2 — Metamodel of the Core Model

The metamodel comprises the following classes:

- **Model**;
- **Modelling_Language**;
- **Model_Element**;
- **Concept**.

The classes that represent models in other parts of [ISO/IEC 19763](#) shall be subclasses of the **Model** class ([6.3.2](#)) and the classes representing the content of these models (the model elements) shall be subclasses of the **Model_Element** class ([6.3.3](#)). Some of the classes in other parts of the ISO/IEC 19763 series inherited from the **Model** class or the **Model_Element** class may override some attributes or references of the classes defined in this document. The classes that represent the modelling languages in which these models are expressed shall be subclasses of the **Modelling_Language** class ([6.3.1](#)).

Each modelling language is a language or notation that is used to model concepts found in the other parts of the ISO/IEC 19763 series.

NOTE 1 Examples are languages used to express ontologies or to model information requirements, processes, services, forms, roles, goals or some other set of concepts that can be modelled.

Each model is a representation of concepts found in the other parts of the ISO/IEC 19763 series.

NOTE 2 Examples are an ontology or a model used to represent a set of information requirements, processes, services, forms roles, goals or some other set of concepts that can be represented in a model.