

Information technology — Metamodel framework for interoperability (MFI) —

Part 3: Metamodel for ontology registration

ICS 35.040

National foreword

This British Standard was published by BSI. It is the UK implementation of ISO/IEC 19763-3:2007.

The UK participation in its preparation was entrusted to Technical Committee IST/40, Data management and interchange.

A list of organizations represented on IST/40 can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 March 2007

© BSI 2007

ISBN 978 0 580 50408 2

Amendments issued since publication

Amd. No.	Date	Comments

INTERNATIONAL
STANDARD

ISO/IEC
19763-3

First edition
2007-03-01

**Information technology — Metamodel
framework for interoperability (MFI) —
Part 3:
Metamodel for ontology registration**

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

Partie 3: Métamodèle pour l'enregistrement de l'ontologie

Reference number
ISO/IEC 19763-3:2007(E)



AVA Documents
Document Sharing Hub

Contents

Page

Foreword.....	iv
Introduction	v
1 Scope	1
2 Conformance	2
2.1 General.....	2
2.2 Degree of conformance.....	2
2.3 Implementation Conformance Statement (ICS)	2
3 Normative references	3
4 Terms, definitions and abbreviated terms	3
4.1 Terms and definitions.....	3
4.2 Abbreviated terms	4
5 Structure of MFI Ontology registration.....	4
5.1 Overview of MFI Ontology registration.....	4
5.2 Relationship between MFI Core and MFI Ontology registration	5
5.3 Metamodel for ontology registration	6
Annex A (informative) Example of MFI Ontology registration	10
Annex B (informative) All metaclasses that inherit from Administered_Item.....	16
Annex C (informative) List of Ontology_Languages	17
Bibliography	18

Figures

Figure 1 — Scope of MFI Ontology registration	1
Figure 2 — Metamodel for ontology registration	4
Figure 3 — Relationship between MFI Core and MFI Ontology registration	5
Figure A.1 — Three examples of the sentences in RO1	10
Figure A.2 — Registration of RO1.....	11
Figure A.3 — Two examples of the sentences in RO2.....	12
Figure A.4 — Registration of RO2.....	13
Figure A.5 — Three examples of the sentences in LO1.....	14
Figure A.6 — Registration of LO1	15
Figure B.1 — All metaclasses that inherit from Administered_Item	16

Tables

Table C.1 — List of Ontology_Language.....	17
--	----

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 19763-3 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 32, *Data management and interchange*.

ISO/IEC 19763 consists of the following parts, under the general title *Information technology — Metamodel framework for interoperability (MFI)*:

- *Part 1: Reference model*
- *Part 2: Core model*
- *Part 3: Metamodel for ontology registration*
- *Part 4: Metamodel for model mapping*

Introduction

Today, in E-business (EB) or E-commerce (EC) through the Internet, the effective interchange of business transactions or other related information across countries and cultures is an important concern for people in both the IT industry and other non-IT industries.

To follow the current trends of EB or EC, industrial consortia have engaged in the standardization of domain-specific business objects, including business process models and software components using common modeling facilities and interchange facilities such as UML and XML. They are very active in standardizing domain-specific business process models and standard modeling constructs such as data elements, entity profiles and value domains.

Moreover, interoperation among autonomous Web-based applications, such as Web services, is becoming important. For that purpose, ontology is a key issue. Ontology is a description of a universe of discourse. A lexicon, a taxonomy, a thesaurus and a familiar conceptual model such as a business process model in UML are all examples of ontology. In addition, ontology includes a more complex axiomatic theory.

Several efforts to establish standards associated with ontology are under way. For example, OMG will publish a specification called ODM, defining the metamodels of ontologies described in several languages and the mappings among them. This part of ISO/IEC 19763 will be expanded to provide for the metadata associated with ontologies to be specified and registered with respect to this part of ISO/IEC 19763. In addition, to promote ontology-based interoperation, a generic framework for registering administrative information related to ontologies is necessary.

This part of ISO/IEC 19763 intends to provide a generic framework for registering administrative information related to ontologies, based on ISO/IEC 19763-2.

NOTE UML and OMG are the trademarks of the Object Management Group.

Information technology — Metamodel framework for interoperability (MFI) —

Part 3: Metamodel for ontology registration

1 Scope

ISO/IEC 19763 specifies a metamodel framework for interoperability. This part of ISO/IEC 19763 specifies the metamodel that provides a facility to register administrative information related to ontologies.

The metamodel specified in this part of ISO/IEC 19763 is intended to promote interoperation among application systems.

It does not specify the metamodels of ontologies described in specific languages and the mappings among them. They are specified in other specifications such as the Ontology Definition Metamodel from the Object Management Group (see bibliography item [1]).

Figure 1 shows the scope of this part of ISO/IEC 19763.

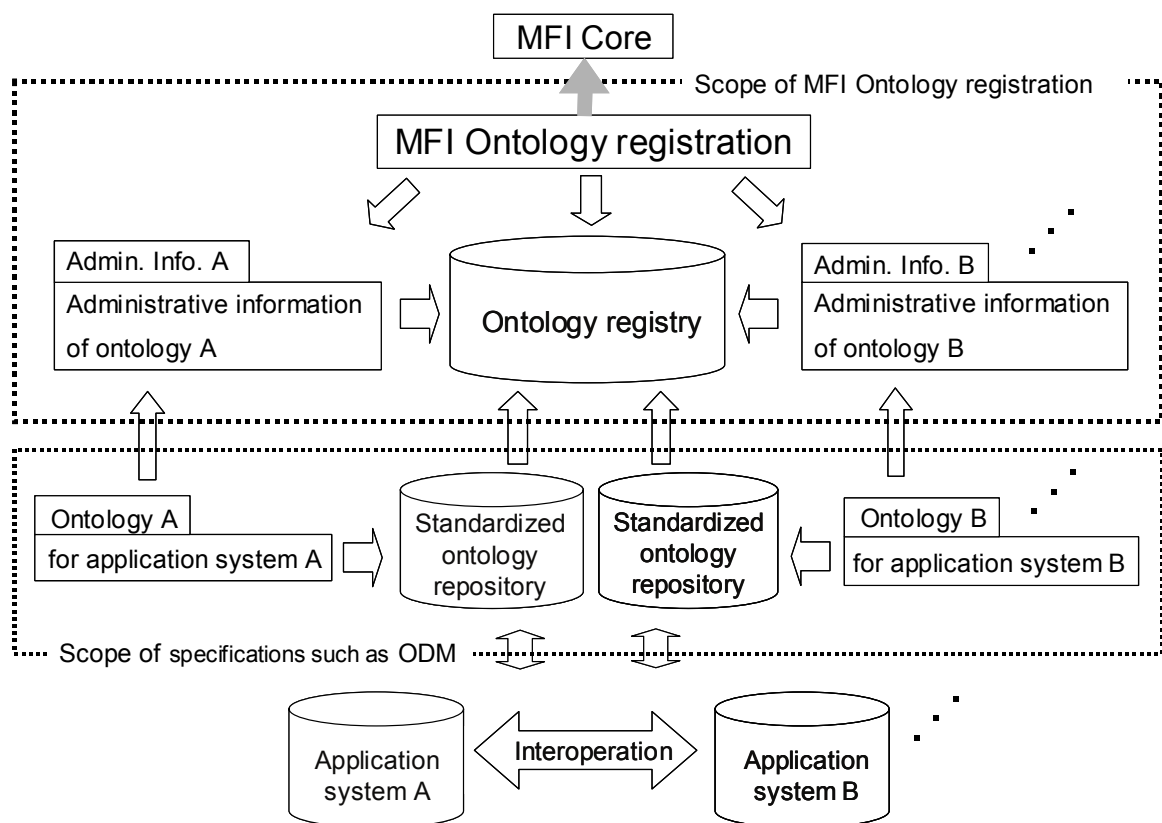


Figure 1 — Scope of MFI Ontology registration