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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

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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.

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*.

This second edition cancels and replaces the first edition (ISO/IEC 19763-3:2007), which has been technically revised.

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*

The following part is under preparation:

— *Part 5: Metamodel for process model registration*

Registration procedure, metamodel for service registration, metamodel for role and goal registration, and on demand model selection will form the subjects of future parts.

Introduction

Interoperation among autonomous applications, such as Web services, is becoming important. To promote interoperation among application systems, unambiguous and formal specifications of the systems, especially of their inputs and outputs, are indispensable. Ontologies have a key role for that.

Several efforts to establish standards associated with ontologies have been made. But, most of them specify languages or are based on some particular language. To promote ontology-based interoperation, in addition to them, a generic framework for registering administrative and evolution information related to ontologies, independent of languages, is necessary.

This part of ISO/IEC 19763 intends to provide a generic framework for registering administrative and evolution information related to ontologies.

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 and evolution information related to ontologies.

The metamodel specified in this part of ISO/IEC 19763 is intended to promote interoperation among application systems, by providing administrative and evolution information related to ontologies, accompanied with standardized ontology repositories that register ontologies themselves in specific languages.

This part of ISO/IEC 19763 does not specify the metamodels of ontologies expressed 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.

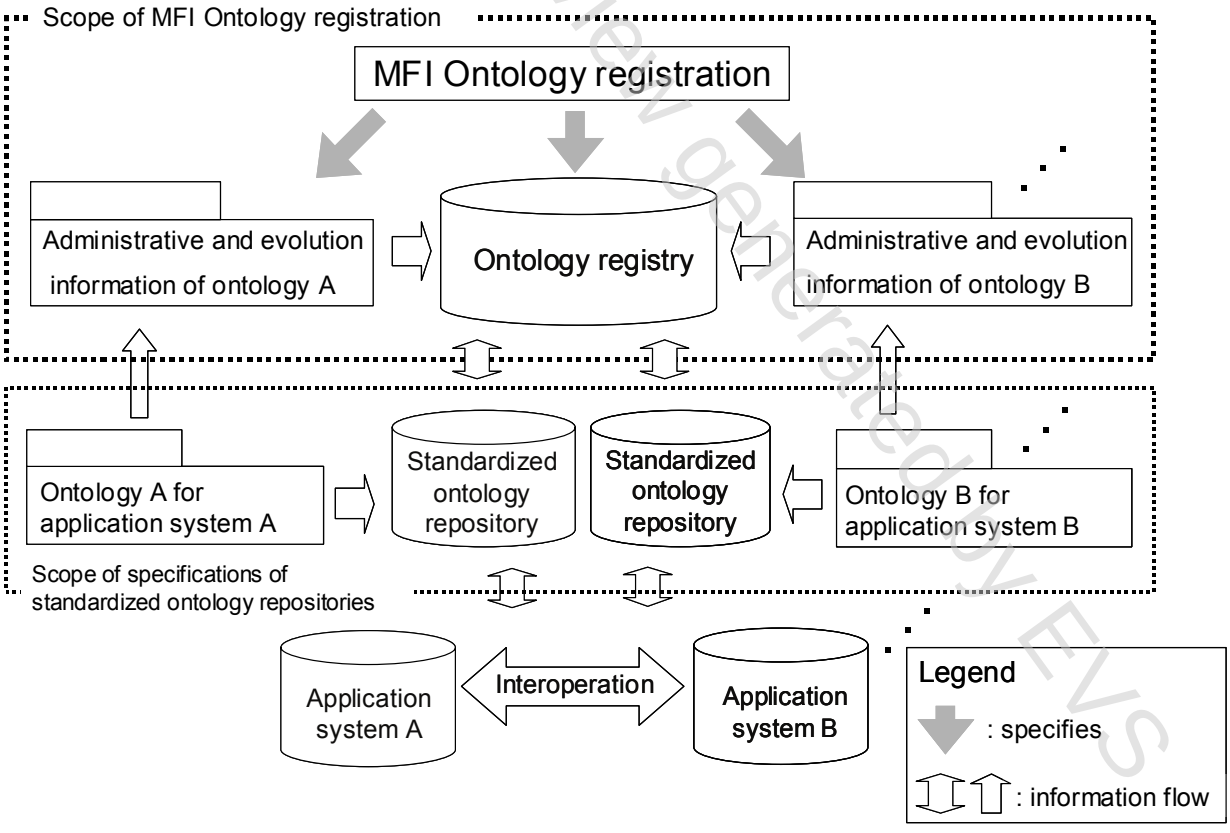

Figure 1 — Scope of MFI Ontology registration

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 11179-3:2003, *Information technology — Metadata registries (MDR) — Part 3: Registry metamodel and basic attributes*

ISO/IEC 11179-3:2003/Cor.1:2004, *Information technology — Metadata registries (MDR) — Part 3: Registry metamodel and basic attributes — Technical Corrigendum 1*

ISO/IEC 19501:2005, *Information technology — Open Distributed Processing — Unified Modeling Language (UML) Version 1.4.2*

ISO/IEC 19502:2005, *Information technology — Meta Object Facility (MOF)*

ISO/IEC 19763-1:2007, *Information technology — Metamodel framework for interoperability (MFI) — Part 1: Reference model*

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 11179-3:2003, ISO/IEC 11179-3:2003/Cor.1:2004, ISO/IEC 19501:2005, ISO/IEC 19502:2005, ISO/IEC 19763-1:2007 and the following apply.

3.1.1 Terms on ontology

3.1.1.1
ontology
specification of concrete or abstract things, and the relationships among them, in a prescribed domain of knowledge

NOTE The specification should be computer processable.

3.1.1.2
registered ontology
ontology that is registered in a registry that conforms to MFI Ontology registration

3.1.1.3
unregistered ontology
ontology that is not registered in a registry that conforms to MFI Ontology registration

3.1.1.4
reference registered ontology
registered ontology that is usable and sharable by a community of interest

3.1.1.5
local registered ontology
registered ontology that is specialized for defined applications

