BS ISO/IEC 19763-7:2015

BSI Standards Publication

Information technology — Metamodel framework for interoperability (MFI)

Part 7: Metamodel for service model registration

bsi.

...making excellence a habit.™

Document Sharing Hub

Full document details: BS ISO/IEC 19763-7:2015

National foreword

This British Standard is the UK implementation of ISO/IEC 19763-7:2015.

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

A list of organizations represented on this committee 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.

© The British Standards Institution 2015.
Published by BSI Standards Limited 2015

ISBN 978 0 580 76116 4

ICS 35.040

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 31 October 2015.

Amendments/corrigenda issued since publication

Date	Text affected

Documents
Document Sharing Hub

Full document details: BS ISO/IEC 19763-7:2015

INTERNATIONAL STANDARD

ISO/IEC 19763-8

First edition
2015-10-15

Information technology — Metamodel framework for interoperability (MFI) —

Part 8: Metamodel for role and goal model registration

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

Partie 8: Métamodèle pour l'enregistrement du modèle de rôle et objectif

Reference number
ISO/IEC 19763-8:2015(E)

Documents
Document Sharing Hub

© ISO/IEC 2015

Full document details: BS ISO/IEC 19763-7:2015

COPYRIGHT PROTECTED DOCUMENT

© ISO/IEC 2015

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested 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

© ISO/IEC 2015 – All rights reserved

Documents
Document Sharing Hub

Full document details: BS ISO/IEC 19763-7:2015

Contents

Page

Foreword ..... **v**

Introduction ..... Error! Bookmark not defined.

1 Scope **1**

2 Normative references **2**

3 Terms, definitions and abbreviated terms **2**
3.1 Terms and definitions 2
3.2 Abbreviated terms 3

4 Conformance **4**
4.1 General 4
4.2 Degree of conformance 4
4.2.1 General 4
4.2.2 Strictly conforming implementation 4
4.2.3 Conforming implementation 4
4.3 Implementation Conformance Statement (ICS) 4

5 Structure of MFI Role and Goal model registration **5**
5.1 Overview of MFI Role and Goal model registration 5
5.2 Associations between MFI Role and Goal model registration and other parts in MFI 6
5.3 Metaclasses in MFI Role and Goal model registration 7
5.3.1 Constraint 7
5.3.2 Constraint_Type 8
5.3.3 Decomposition 8
5.3.4 Decomposition_Type 8
5.3.5 Description_Type 9
5.3.6 Functional_Goal 9
5.3.7 Goal 10
5.3.8 Involvement_Type 11
5.3.9 Nonfunctional_Goal 11
5.3.10 Organization 12
5.3.11 Process_Involvement 12
5.3.12 Role 13
5.3.13 Role_Goal_Model 14
5.3.14 Role_Goal_Modelling_Language 15
5.3.15 Service_Involvement 15

Annex A (informative) **Examples** **16**
A.1 Introduction 16
A.2 Example 1 - Trip Arrangement in i* 16
A.3 Example 2 - Library Management in ODP (UML profiles) 20

Bibliography **22**

© ISO/IEC 2015 – All rights reserved

Documents
Document Sharing Hub
Full document details: BS ISO/IEC 19763-7:2015

Figures

Figure 1 - The scope of MFI Role and Goal model registration 1

Figure 2 - Metamodel of MFI Role and Goal model registration 6

Figure 3 - Associations between MFI Role and Goal model registration and other parts in MFI 6

Figure 4 - Associations between MFI Role and Goal model registration and MFI Core and mapping 7

Figure A.1 - Example of Trip_Arrangement model in i* 16

Figure A.2 - Registration of the Trip_Arrangement example (Part 1 of 2) 18

Figure A.2 - Registration of the Trip_Arrangement example (Part 2 of 2) 19

Figure A.3 - Example of Library_Management model in ODP 20

Figure A.4 - Registration of the Library_Management example 21

Tables

Table A.1 - Transformations for Example 1 17

Table A.2 - Transformations for Example 2 21

© ISO/IEC 2015 – All rights reserved

Documents
Document Sharing Hub

Full document details: BS ISO/IEC 19763-7:2015

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.

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).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT), see the following URL: Foreword — Supplementary information.

ISO/IEC 19763-8 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: Framework*

— *Part 3: Metamodel for ontology registration*

— *Part 5: Metamodel for process model registration*

— *Part 6: Registry Summary*

— *Part 7: Metamodel for service model registration*

— *Part 8: Metamodel for role and goal model registration*

— *Part 9: On demand model selection [Technical Report]*

— *Part 10: Core model and basic mapping*

— *Part 12: Metamodel for information model registration*

— *Part 13: Metamodel for form design registration*

© ISO/IEC 2015 – All rights reserved

Documents
Document Sharing Hub
Full document details: BS ISO/IEC 19763-7:2015

Introduction

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

Interoperation among autonomous Web-based applications, such as Web services, is becoming increasingly important. Goals are descriptive statements of the intent of a user or organization, and each goal can be viewed as an objective that a process or a service should achieve. Effective management of goals will facilitate the reuse of information resources in support of those goals. Roles are abstract characterizations of organizational behaviours and responsibilities within a specified organizational context. Descriptions of roles will be helpful in characterizing goals in a complete and correct way, and reusing goals based on roles. Note that any particular set of roles and goals are owned by a specific organization.

There are many existing standards and specifications, typically developed for a specific domain or business area, that can be used to describe or to model goals and the roles associated with these goals. One example is ISO/IEC 14662, Information Technologies - Open-edi reference model, which is a domain specific reference model and introduces the concept of a business goal as a special type of goal that is shared within that community.

This part of ISO/IEC 19763 provides a framework for registering generic descriptive information about models that describe roles and goals.

© ISO/IEC 2015 – All rights reserved
Documents
Document Sharing Hub
Full document details: BS ISO/IEC 19763-7:2015

Information technology — Metamodel framework for interoperability (MFI) —

Part 8:
Metamodel for role and goal model registration

1 Scope

The primary purpose of the multipart standard ISO/IEC 19763 is to specify a metamodel framework for interoperability. This part of ISO/IEC 19763 specifies a metamodel for registering the role and goal models of users of services and/or processes.

The metamodel that this part specifies is intended to promote the reuse of goals by roles within/across role and goal model repositories, and further promote services selection across service model repositories based on goals. For this purpose, it provides administrative information and common semantics of role and goal models created with a specific role and goal modelling language, including Goal-oriented requirements modelling (i*) [1], Keep All Objects Satisfied (KAOS) [2], Non-functional Requirement Framework (NFRF) [3], Business Motivation Model (BMM) [4], Reference Model of Open Distributed Processing (RM-ODP) [5] etc. Figure 1 shows the scope of this part. In this figure, “register” refers to the registration activity of registering administrative and descriptive information for role and goal models into the role and goal model registry based on the metamodel specified in this part of ISO/IEC 19763, as well as the mapping between source role and goal metamodels and MFI Role and Goal metamodel.

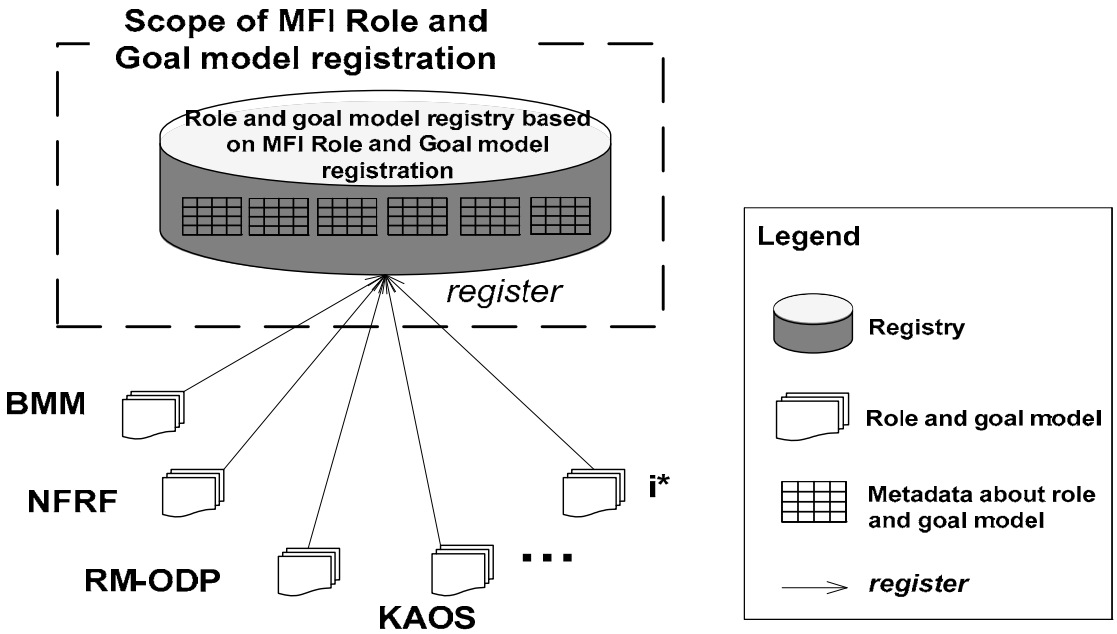

Figure 1 - The scope of MFI Role and Goal model registration

© ISO/IEC 2015 – All rights reserved

Documents Document Sharing Hub
Full document details: BS ISO/IEC 19763-7:2015

2 Normative references

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

NOTE One or more terms and definitions of the referenced International Standards listed below are used in Clause 3 Terms and Definitions.

ISO/IEC 19763-5, Information technology – Metamodel framework for interoperability (MFI) – Part 5: Metamodel for process model registration

ISO/IEC 19763-7, Information technology – Metamodel framework for interoperability (MFI) – Part 7: Metamodel for service model registration

ISO/IEC 19763-10, Information technology – Metamodel framework for interoperability (MFI) – Part 10: Core model and basic mapping

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1.1
goal
intended outcome of user interaction with a process or service

NOTE Adapted from ISO/IEC TR 25060:2010, 2.7

3.1.2
functional goal
underlying functionality that a process or service is expected to deliver

3.1.3
nonfunctional goal
expected quantitative or qualitative attributes of a functionality

3.1.4
involvement type
statement that indicates the type of involvement of a role with a process or service

NOTE Examples are performer, beneficiary, customer

3.1.5
organization
unique framework of authority within which individuals act, or are designated to act, towards some purpose

NOTE 1 The kinds of organizations covered by ISO/IEC 6523-1 include the following examples:

a) an organization incorporated under law;

b) an unincorporated organization or activity providing goods and/or services including:

1) partnerships;

2) social or other non-profit organizations or similar bodies in which ownership or control is vested in a group of individuals;

© ISO/IEC 2015 – All rights reserved
Documents
Document Sharing Hub
Full document details: BS ISO/IEC 19763-7:2015

3) sole proprietorships;

4) governmental bodies.

c) groupings of the above types of organizations where there is a need to identify these in information interchange.

NOTE 2 Adapted from ISO/IEC 6523-1:1998, 3.1

[ISO/IEC 11179-3:2013 3.2.90]

3.1.6
process involvement
statement that specifies how a particular role is engaged in or contributes in a particular process

3.1.7
role
named specific behaviour of an entity participating in a particular context

[ISO 14813-5:2010, B.1.133]

3.1.8
service involvement
statement that specifies how a particular role is involved in a particular service

3.2 Abbreviated terms

BMM
Business Motivation Model

i*
Goal-oriented requirements modelling

KAOS
Keep All Objects Satisfied

MFI Core and mapping
ISO/IEC 19763-10, Information technology – Metamodel framework for interoperability (MFI) - Part 10: Core model and basic mapping

MFI Process model registration
ISO/IEC 19763-5, Information technology – Metamodel framework for interoperability (MFI) - Part 5: Metamodel for process model registration

MFI Role and Goal model registration
ISO/IEC 19763-8, Information technology – Metamodel framework for interoperability (MFI) - Part 8: Metamodel for role and goal model registration

MFI Service model registration
ISO/IEC 19763-7, Information technology – Metamodel framework for interoperability (MFI) - Part 7: Metamodel for service model registration

NFRF
Non-functional Requirement Framework

RM-ODP
Reference Model of Open Distributed Processing

UML
Unified Modeling Language

© ISO/IEC 2015 – All rights reserved

Documents
Document Sharing Hub
Full document details: BS ISO/IEC 19763-7:2015