INTERNATIONAL STANDARD

ISO/IEC 19788-5

First edition
2012-05-01

Information technology — Learning, education and training — Metadata for learning resources —

Part 5: Educational elements

Technologies de l'information — Apprentissage, éducation et formation — Métadonnées pour ressources d'apprentissage —

Partie 5: Éléments pédagogiques

iTeh Standards
(https://standards.iteh.ai)
Document Preview

ISO/IEC 19788-5:2012
https://standards.iteh.ai/catalog/standards/iso/8641dfc3-d631-411c-ae93-7b6d4d7c4645/iso-iec-19788-5-2012

Reference number
ISO/IEC 19788-5:2012(E)

© ISO/IEC 2012

iTeh Standards
(https://standards.iteh.ai)
Document Preview

ISO/IEC 19788-5:2012
https://standards.iteh.ai/catalog/standards/iso/8641dfc3-d631-411c-ae93-7b6d4d7c4645/iso-iec-19788-5-2012

COPYRIGHT PROTECTED DOCUMENT

© ISO/IEC 2012

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing 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 2012 – All rights reserved

Contents

Page

Foreword v
0 Introduction vi
0.1 Overall purpose of ISO/IEC 19788 vi
0.2 Purpose and overview of ISO/IEC 19788-5 vi
1 Scope 1
2 Normative references 1
3 Terms and definitions 1
4 Abbreviated terms 3
5 Data element specifications 4
5.1 Annotation date (DES0100) 4
5.2 Annotation text (DES0200) 5
5.3 Annotation type (DES0300) 5
5.4 Audience language (DES0400) 6
5.5 Audience level (DES0500) 7
5.6 Audience role (DES0600) 7
5.7 Contribution date (DES0700) 8
5.8 Contributor role (DES0800) 8
5.9 Curriculum assessment (DES0900) 9
5.10 Curriculum level (DES1000) 10
5.11 Curriculum specification (DES1100) 10
5.12 Curriculum topic (DES1200) 11
5.13 Has annotation (DES1300) 11
5.14 Has annotator (DES1400) 12
5.15 Has audience (DES1500) 12
5.16 Has audience (DES1600) 13
5.17 Has contribution (DES1700) 14
5.18 Has contributor (DES1800) 14
5.19 Has curriculum (DES1900) 15
5.20 Has learning activity (DES2000) 15
5.21 Induced activity (DES2100) 16
5.22 Learning activity occurrence (DES2200) 16
5.23 Learning method (DES2300) 17
5.24 Learning method (DES2400) 17
5.25 Maximum age (DES2500) 18
5.26 Minimum age (DES2600) 19
5.27 Pedagogical relation (DES2700) 19
5.28 Pedagogical type (DES2800) 20
5.29 Prerequisite (DES2900) 21
5.30 Typical learning time (DES3000) 21
6 Resource class definitions 22
6.1 The resource class “Learning resource” 22
6.2 The resource class “Person” 22
6.3 The resource class “Annotation” 22
6.4 The resource class “Audience” 23
6.5 The resource class “Contribution” 23
6.6 The resource class “Curriculum” 23
6.7 The resource class “Learning activity” 23
7 Predefined rule sets 24

iTeh Standards
(https://standards.iteh.ai)
Document Preview
ISO/IEC 19788-5:2012
https://standards.iteh.ai/catalog/standards/sist/...

© ISO/IEC 2012 – All rights reserved

Annex A (normative) MLR Vocabularies 25
A.1 Vocabulary “Agent role” 25
A.2 Vocabulary “Audience role” 25
A.3 Vocabulary “Induced activity” 26
A.4 Vocabulary “Learning method” 27
A.5 Vocabulary “Annotation type” 29
Annex B (informative) Human interface equivalents: ISO English and ISO French 30
Annex C (informative) Diagram of data element specifications for ISO/IEC 19788-5 31
Annex D (informative) Crosswalks to MLR 32
D.1 Learning Object Metadata (LOM) to MLR crosswalk 32
D.2 DCMI [1] to ISO/IEC 19788 MLR crosswalk 33
Bibliography 34

iTeh Standards
(https://standards.iteh.ai)
Document Preview

ISO/IEC 19788-5:2012
https://standards.iteh.ai/catalog/standards/iso/8641dfc3-d631-411c-ae93-7b6d4d7c4645/iso-iec-19788-5-2012

 © ISO/IEC 2012 – All rights reserved

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 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 technologies, 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 prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated the 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 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 19788-5 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology,* Subcommittee SC 36, *Information technology for learning, education and training.*

ISO/IEC 19788 consists of the following parts, under the general title *Information technology — Learning, education and training — Metadata for learning resources:*

- *Part 1: Framework*
- *Part 2: Dublin Core elements*
- *Part 3: Basic application profile*
- *Part 5: Educational elements*

The following parts are under preparation:

- *Part 4: Technical elements*
- *Part 6: Availability, distribution, and intellectual property elements*

Bindings, *Data elements for MLR records*, and *Data elements for Persons* will form the subjects of future Parts 7, 8, and 9, respectively.

iTeh Standards
(https://standards.iteh.ai)
Document Preview
ISO/IEC 19788-5:2012
https://standards.iteh.ai/catalog/standards/iso/8641dfc3-d631-411c-ae93-7b6d4d7c4645/iso-iec-19788-5-2012

© ISO/IEC 2012 – All rights reserved

0 Introduction

0.1 Overall purpose of ISO/IEC 19788

The primary purpose of ISO/IEC 19788 is to facilitate: (1) the description of a learning resource by providing a standards-based approach to the identification and specification of the metadata elements required to describe a learning resource, e.g. as a metadata learning resource (MLR) record; and (2) the search, discovery, acquisition, evaluation, and use of learning resources, for instance by learners, instructors or automated software processes. The interoperability of these functions can be achieved through harvesting or federated search processes, among other technologies and solutions. ISO/IEC 19788 is based on identified user requirements.

ISO/IEC 19788 is modularly structured with all subsequent parts corresponding to a specified set of user requirements for the identification and specification of metadata elements having a particular focus and intended use in the description of a learning resource. This includes categories of metadata elements focused on technical perspectives, pedagogical aspects, availability and intellectual property aspects, bindings, etc.

0.2 Purpose and overview of ISO/IEC 19788-5

Educational elements defined in this part of ISO/IEC 19788 provide a means to describe learning resources related to their use in learning activities, their relation to curricula or programs of teaching, their relation to specific target groups, etc.

iTeh Standards
(https://standards.iteh.ai)
Document Preview
ISO/IEC 19788-5:2012
https://standards.iteh.ai/catalog/standards/iso/8641dfc3-d631-411c-ae93-7b6d4d7c4645/iso-iec-19788-5-2012

This part of ISO/IEC 19788 provides a set of data elements to describe the educational use of learning resources. In the Information Technology for Learning Education and Training (ITLET) context, resources are often used to attain a specific educational outcome that can be described in some form of educational framework, for example as part of a curriculum, lesson plan, study program, etc. Information about a resource may include a curriculum topic, often associated with a specific educational level, and sometimes with a related description of a teaching method. Moreover, the achievement of the educational outcome can also be measured or ascertained through some form of assessment.

The data elements defined in this part of ISO/IEC 19788 can be used in combination with elements from other parts of ISO/IEC 19788, and/or in combination with elements from other standards, such as ISO 15836:2009 [5], IEEE 1484.12.1-2002 [3] or other metadata schemas. Accordingly, a great number of refinements of the data elements defined in this part of ISO/IEC 19788 are under the responsibility of communities.

 © ISO/IEC 2012 – All rights reserved

Information technology — Learning, education and training — Metadata for learning resources —

Part 5: Educational elements

1 Scope

ISO/IEC 19788 specifies, in a rule-based manner, metadata elements and their attributes for the description of learning resources. This includes the rules governing the identification of metadata elements and the specification of metadata attributes.

These metadata elements are used to form the description of a learning resource, i.e. as a metadata learning resource (MLR) record.

This part of ISO/IEC 19788 specifies, using the framework specified in ISO/IEC 19788-1, educational aspects of learning resources across various educational, cultural and linguistic settings.

2 Normative references

iTeh Standards
(https://standards.iteh.ai)
Document Preview

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies.

ISO 639-2:1998(E/F)[1], *Codes for the representation of names of languages — Part 2: Alpha-3 code/Codes pour la représentation des noms de langue — Partie 2: Code alpha-3*

ISO/IEC 19788-5:2012
https://standards.iteh.ai/catalog/standards/sist/...-iso-iec-19788-5-2012

ISO 639-3:2007(E), *Codes for the representation of names of languages — Part 3: Alpha-3 code for comprehensive coverage of languages*

ISO/IEC 10646:2011(E), *Information technology — Universal Coded Character Set (UCS)*

ISO/IEC 19788-1(E), *Information technology — Learning, education and training — Metadata for learning resources — Part 1: Framework*

ISO/IEC 19788-2(E), *Information technology — Learning, education and training — Metadata for learning resources — Part 2: Dublin Core elements*

3 Terms and definitions

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

3.1
audience
set of entities for which the **learning resource** (3.6) is intended or useful

[1] This part of ISO/IEC 19788 uses the ISO 639-2:1998 Table 4 Terminology Code set, hereafter referred to as "ISO 639-2/T" For additional information, see ISO 639-2:1998, 4.1, Form of language codes.

© ISO/IEC 2012 – All rights reserved

3.2
content value
information recorded as the content of the **data element** (ISO/IEC 19788-1:2011, 3.11), in compliance with its **data element specification** (ISO/IEC 19788-1:2011, 3.14)

[ISO/IEC 19788-1:2011, 3.10]

3.3
definition
representation of a concept by a descriptive statement which serves to differentiate it from related concepts

[ISO 1087-1:2000, 3.3.1]

3.4
domain
<data element> **resource class** (3.10) whose **resources** (ISO/IEC 19788-1:2011, 3.30) are described by the **data element** (ISO/IEC 19788-1:2011, 3.11) under consideration

NOTE A central resource class for ISO/IEC 19788 is *Learning Resource* (the set of all learning resources).

[ISO/IEC 19788-1, 3.16]

3.5
identifier
sequence of characters capable of uniquely identifying an **entity** (ISO/IEC 19788-1:2011, 3.17)

NOTE 1 An identifier is linguistically neutral, with no translation provided.

NOTE 2 An identifier may be of the nature of a composite identifier, i.e. a unique identifier, consisting of two or more identifiers and/or other data elements, whose inter-workings are rule-based and which together serve as a "single" identifier.

[ISO/IEC 19788-1:2011, 3.19]

iTeh Standards
(https://standards.iteh.ai)
Document Preview
ISO/IEC 19788-5:2012
https://standards.iteh.ai/catalog/standards/iso/8641dfc3-d631-411c-ae93-7b6d4d7c4645/iso-iec-19788-5-2012

3.6
learning resource
resource (ISO/IEC 19788-1:2011, 3.30) used for learning, education and training

[ISO/IEC 19788-1:2011, 3.20]

3.7
name
designation of an object by a linguistic expression

[ISO/IEC 11179-1:2004, 3.2.21]

3.8
range
<data element> **resource class** (3.10) to which the **content values** (3.2) of the **data element** (ISO/IEC 19788-1:2011, 3.11) belong, or set of **literals** (ISO/IEC 19788-1:2011, 3.21) comprising the string representations of the permissible values of the data element under consideration

[ISO/IEC 19788-1:2011, 3.28]

3.9
refine
<data element specification> have an associated property which is a sub-property of the property associated with

© ISO/IEC 2012 – All rights reserved

NOTE 1 This implies that the value of the domain attribute of the first data element specification is identical to or a proper subset of the value of the domain attribute of the second data element specification and that the value of the range attribute of the first data element specification is identical to or a proper subset of the value of the range attribute of the second data element specification.

NOTE 2 Data element instances of the first data element specification are said to refine data element instances of the second data element specification.

EXAMPLE 1 Property “is son of” refines property “is child of”.

EXAMPLE 2 Property “has mother” refines property “has parent”.

[ISO/IEC 19788-1:2011, 3.29]

3.10
resource class
set of **resources** (ISO/IEC 19788-1:2011, 3.30) that can be identified by listing or description of boundaries and meaning and whose properties and behaviour follow the same **rule** (ISO/IEC 19788-1:2011, 3.32)

NOTE 1 A resource class has the following attributes:
— Identifier;
— Name;
— Definition;
— SubclassOf [multiple inheritance];
— Note.

EXAMPLES *Learning Resource* (set of all learning resources), *Person* (set of all Persons), *Rights* (set of all rights objects), and *Document* (set of all documents).

NOTE 2 Adapted from the definition of “object class” in ISO/IEC 11179-1:2004, 3.3.22.

[ISO/IEC 19788-1:2011, 3.31]

iTeh Standards
(https://standards.iteh.ai)
Document Preview

3.11
rule set
defined and pre-established set of **rules** (ISO/IEC 19788-1:2011, 3.32) that are used together

ISO/IEC 19788-5:2012
https://standards.iteh.ai/catalog/standards/iso/80411dc5-d651-4f4e-ab93-7bbd4d7e4845/iso-iec-19788-5-2012

[ISO/IEC 19788-1:2011, 3.33]

4 Abbreviated terms

For the purposes of this document, the following abbreviations and acronyms apply.

DCMI	Dublin Core Metadata Initiative
DES	Data Element Specification
LOM	Learning Object Metadata
MLR	Metadata for Learning Resources
PRS	Predefined rule set
RC	Resource class
URI	Uniform Resource Identifier
URN	Uniform Resource Name

© ISO/IEC 2012 – All rights reserved

5 Data element specifications

All data element specification attributes are introduced in section 6.2 of ISO/IEC 19788-1:2011 *Framework*, including data element specification (DES) identifiers. Examples of such unique identifiers are "ISO_IEC_19788-2:2011::DES0020", "ISO_IEC_19788-5:2012::DES0100", etc. Implementing this Standard in a technical application will often require a mapping of the DES identifiers defined in this (and other parts) to a HTTP URI [5], following the rules given in a footnote to rule [R0004] in the framework, for convenience here cited in full:

"*For bindings those identifiers will map URI as defined by IETF RFC 5141 (A Uniform Resource Name (URN) Namespace for the International Organization for Standardization (ISO)). Namespace related in this Part of ISO IEC 19788 will be based on IETF RFC 5141 and its proposed process for identifier resolution (clause 2.8). For example, this Part of ISO/IEC 19788 (edition 1) document with identifier urn:iso:std:iso-iec:19788:-1:ed-1:en corresponds to the HTTP URI http://standards.iso.org/iso-iec/19788/-1/ed-1/en/ (using urn:iso:std:iso-iec:19788:-1:ed-1:en would also be possible*)."

As an example, the URI for the MLR 5 Data element ISO_IEC_19788-5:2012::DES0200, Annotation text, will be http://standards.iso.org/iso-iec/19788/-5/ed-1/en/DES0200.

The range attribute of data elements can either be a resource class or a set of literals.

Resource classes are defined in Clause 6.

In the following list, data elements specifications are listed in alphabetical order of their property name. A graphical representation -of the data element specifications can be found in Annex C *Diagram of data element specifications for ISO/IEC 19788-5*.

iTeh Standards
(https://standards.iteh.ai)
Document Preview

5.1 Annotation date (DES0100)

Data element specification	
Identifier	ISO_IEC_19788-5:2012::DES0100
Data element attributes	
Property name	annotation date
Definition	date this annotation was created
Linguistic indicator	non-linguistic
Domain	*Annotation* (ISO_IEC_19788-5:2012::RC0001)
Range	*literal*
Content value rules	ISO_IEC_19788-1:2011::PRS0002 (Date)
Refines	-
Example(s)	2005-08-07
Note(s)	-

ISO/IEC 19788-5:2012
https://standards.iteh.ai/catalog/standards/iso/8641dfc3-d631-4f1c-ae93-7b6d4d7c4645/iso-iec-19788-5-2012

© ISO/IEC 2012 – All rights reserved

5.2 Annotation text (DES0200)

Data element specification	
Identifier	ISO_IEC_19788-5:2012::DES0200
Data element attributes	
Property name	annotation text
Definition	textual comment about the use of the learning resource
Linguistic indicator	linguistic
Domain	*Annotation* (ISO_IEC_19788-5:2012::RC0001)
Range	*literal*
Content value rules	ISO_IEC_19788-1:2011::PRS0001 (MLR String)
Refines	-
Example(s)	Found useful as remedial work for first graders (eng)
Note(s)	-

iTeh Standards
(https://standards.iteh.ai)
Document Preview

5.3 Annotation type (DES0300)

Data element specification	
Identifier	ISO_IEC_19788-5:2012::DES0300
Data element attributes	
Property name	annotation type
Definition	type of the annotation
Linguistic indicator	non- linguistic
Domain	*Annotation* (ISO_IEC_19788-5:2012::RC0001)
Range	*literal*
Content value rules	RS_DES0300
Refines	-
Example(s)	ISO_IEC_19788-5:2012::VA.5:T040 (reliability)
Note(s)	-

ISO/IEC 19788-5:2012
https://standards.iteh.ai/catalog/standards/sist/8641dfb3-d624-411e-ac93-7b6d4d7e4645/iso-iec-19788-5-2012

© ISO/IEC 2012 – All rights reserved

ID : RS_DES0300	
Rule_ID	Rule statement / Example(s) & Note(s)
01	Is a MLR String (ISO_IEC_19788-1:2011::PRS0001)
02	Is the identifier of a term from ISO_IEC_19788-5:2012::VA.5 "Annotation type" (see Annex A.5)

5.4 Audience language (DES0400)

Data element specification	
Identifier	ISO_IEC_19788-5:2012::DES0400
Data element attributes	
Property Name	audience language
Definition	human language of the audience
Linguistic indicator	non-linguistic
Domain	*Audience* (ISO_IEC_19788-5:2012::RC0002)
Range	*literal*
Content value rules	RS_DES0400
Refines	-
Example(s)	fra (French) eng (English)
Note(s)	-

iTeh Standards (https://standards.iteh.ai) Document Preview
ISO/IEC 19788-5:2012
https://standards.iteh.ai/catalog/standards/iso/8641dfc3-d631-411c-ae93-7b6d4d7c4645/iso-iec-19788-5-2012

ID : RS_DES0400	
Rule ID	Rule statement / Example(s) & Note(s)
01	Is a MLR String (ISO_IEC_19788-1:2011::PRS0001)
02	If an entry can be found for a given language, use three letter code ISO 639-2/T, else use three letter code ISO 639-3

© ISO/IEC 2012 – All rights reserved