BS EN ISO/IEC 19788-5:2014

BSI Standards Publication

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

Part 5: Educational elements

bsi.

...making excellence a habit.™

Document Sharing Hub

Full document details: BS EN ISO/IEC 19788-5:2014

National foreword

This British Standard is the UK implementation of EN ISO/IEC 19788-5:2014. It is identical to ISO/IEC 19788-4:2012.

The UK participation in its preparation was entrusted to Technical Committee IST/43, Information technology for learning, education and training.

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 2014.
Published by BSI Standards Limited 2014

ISBN 978 0 580 82693 1
ICS 03.100.30; 35.240.99

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 28 February 2014.

Amendments/corrigenda issued since publication

Date	Text affected

Documents
Document Sharing Hub

Full document details: BS EN ISO/IEC 19788-5:2014

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO/IEC 19788-5

January 2014

ICS 03.100.30; 35.240.99

English Version

Information technology - Learning, education and training - Metadata for learning resources - Part 5: Educational elements (ISO/IEC 19788-5:2012)

Technologies de l'information - Apprentissage, éducation et formation - Métadonnées pour ressources d'apprentissage - Partie 5: Éléments pédagogiques (ISO/IEC 19788-5:2012)

Informationstechnik - Lernen, Ausbildung und Weiterbildung - Metadaten für Lernressourcen - Teil 5: Ausbildungselemente (ISO/IEC 19788-5:2012)

This European Standard was approved by CEN on 1 December 2013.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

© 2014 CEN All rights of exploitation in any form and by any means reserved worldwide for CEN national Members.

Ref. No. EN ISO/IEC 19788-5:2014 E

Documents
Document Sharing Hub

Full document details: BS EN ISO/IEC 19788-5:2014

Foreword

The text of ISO/IEC 19788-5:2012 has been prepared by Technical Committee JTC 1 “Information technology” of the International Organisation for Standardization (ISO) and the International Electrotechnical Commission (IEC) and has been taken over as EN ISO/IEC 19788-5:2014 by Technical Committee CEN/TC 353 “Information and Communication Technologies for Learning, Education and Training” the secretariat of which is held by UNI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by July 2014, and conflicting national standards shall be withdrawn at the latest by July 2014.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO/IEC 19788-5:2012 has been approved by CEN as EN ISO/IEC 19788-5:2014 without any modification.

AVA Documents
Document Sharing Hub

Full document details: BS EN ISO/IEC 19788-5:2014

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

© ISO/IEC 2012 – All rights reserved

Documents
Document Sharing Hub
Full document details: BS EN ISO/IEC 19788-5:2014

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

© ISO/IEC 2012 – All rights reserved
Documents
Document Sharing Hub
Full document details: BS EN ISO/IEC 19788-5:2014

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.

© ISO/IEC 2012 – All rights reserved

Documents
Document Sharing Hub
Full document details: BS EN ISO/IEC 19788-5:2014

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.

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
Documents
Document Sharing Hub
Full document details: BS EN ISO/IEC 19788-5:2014

INTERNATIONAL STANDARD ISO/IEC 19788-5:2012(E)

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

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 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

AVA Documents Document Sharing Hub

Full document details: BS EN ISO/IEC 19788-5:2014

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]

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
Documents
Document Sharing Hub
Full document details: BS EN ISO/IEC 19788-5:2014

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]

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

[ISO/IEC 19788-1:2011, 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

Documents
Document Sharing Hub
Full document details: BS EN ISO/IEC 19788-5:2014

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*.

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 2012 – All rights reserved
Documents
Document Sharing Hub
Full document details: BS EN ISO/IEC 19788-5:2014

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)	-

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 2012 – All rights reserved

Documents
Document Sharing Hub
Full document details: BS EN ISO/IEC 19788-5:2014

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)	-

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
Documents
Document Sharing Hub
Full document details: BS EN ISO/IEC 19788-5:2014