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

Part 8: Data elements for MLR records

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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.

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

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The committee responsible for this document is ISO/IEC JTC 1, *Information technology*, Subcommittee SC 36, *Information technology for learning, education and training*.

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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 4: Technical elements*

— *Part 5: Educational elements*

— *Part 7: Bindings*

— *Part 8: Data elements for MLR records*

— *Part 9: Data elements for Persons*

The following part is under preparation:

— *Part 11: Migration from the LOM to MLR*

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Introduction

The primary purpose of this part 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 example, by learners, instructors, or automated software processes.

This International Standard is modularly structured with all its 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.

This part of ISO/IEC 19788 uses the data element specification (DES) model and framework provided in ISO/IEC 19788-1 to specify data elements for the description of MLR records.

An MLR record is defined as a "specified set of data elements describing a learning resource and resources directly related to that learning resource" (see ISO/IEC 19788-1:2011, 3.24).

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

Part 8: Data elements for MLR records

1 Scope

1.1 Scope of MLR multipart standard

The primary purpose of this International Standard is to specify metadata elements and their attributes for the description of learning resources. This includes the rules governing the identification of data elements and the specification of their attributes.

This International Standard provides data elements for the description of learning resources and resources directly related to learning resources.

This International Standard provides principles, rules, and structures for the specification of the description of a learning resource. It also identifies and specifies the attributes of a data element, as well as the rules governing their use. The key principles stated in ISO/IEC 19788-1 are informed by a user requirements-driven context with the aim of supporting multilingual and cultural adaptability requirements from a global perspective.

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ISO/IEC 19788-1 is information technology neutral and defines a set of common approaches, i.e. methodologies and constructs, which apply to the development of the subsequent parts of ISO/IEC 19788.

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1.2 Scope of this part of ISO/IEC 19788

This part of ISO/IEC 19788 provides data elements for the description of MLR records: sets of data elements describing a learning resource [and resources directly related to that learning resource, e.g. persons (authors, contributors), annotations, learning activities, metadata records, etc.]. It can also be used to keep track of the record editing process including global metadata author identification, last record update, and application profile used for the description of a learning resource.

These elements can later be combined with other descriptive elements from other parts of ISO/IEC 19788 or other standards to provide the description of a learning resource and of related entities needed for that description.

This part of ISO/IEC 19788 enables the storage of learning resource description in the traditional database approach and the exchange of descriptions through harvesting mechanisms[1)].

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.

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

1) RDA (Resource Description and Access), OAI PMH (Open Archives Initiative Protocol for Metadata Harvesting), etc.

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3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 19788-1 and the following apply.

3.1
internationalized resource identifier
IRI
sequence of characters from the Universal Character Set (see ISO 10646) constructed according to the syntax rules provided in RFC 3987

Note 1 to entry: IRIs are generalization of URIs (ISO/IEC 19788-1:2011, 3.36). While URIs are sequence of characters chosen from a limited subset of US-ASCII, IRIs may contain characters from the Universal Character Set such as Chinese, Japanese, Korean, or Cyrillic characters.

Note 2 to entry: A mapping from IRIs to URIs is defined in RFC 3987, making it possible to use IRIs instead of URIs, where appropriate, to identify resources.

[SOURCE: Adapted from Internationalized Resource Identifiers (IRIs). IETF RFC 3987. Available from: http://tools.ietf.org/pdf/rfc3987.pdf]

3.2
mutable MLR record
container for an MLR record (ISO/IEC 19788-1:2011, 3.24) describing a given learning resource (ISO/IEC 19788-1:2011, 3.20) and resources directly related to that learning resource

Note 1 to entry: An MLR record (ISO/IEC 19788-1:2011, 3.24) is non-mutable. Addition or deletion of data elements (ISO/IEC 19788-1:2011, 3.11) to the data element set or modification of any data element belonging to the data element set makes it a different MLR record.

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Note 2 to entry: Unlike the situation for an MLR record, the state (content) of a mutable MLR record can change over time while still describing a given learning resource and resources related to it.

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4 Symbols and abbreviated terms

ASCII	American Standard Code for Information Interchange
DES	Data Element Specification
HTML	Hyper Text Markup Language
HTTP	Hyper Text Transfer Protocol
IRI	Internationalized Resource Identifier
JPEG	Joint Photographic Experts Group
JSON	JavaScript Object Notation
MLR	Metadata for Learning Resource
PRS	Predefined Rule Set
OAI PMH	Open Archives Initiative Protocol for Metadata Harvesting
RC	Resource Class
URI	Uniform Resource Identifier
UCS	Universal Character Set

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UTF UCS Transformation Format

XML Extensible Markup Language

5 Data element specifications

5.1 Has Record (DES0100)

Data element specification	
Identifier	ISO_IEC_19788-8:2015::DES0100
Data element specification attributes	
Property name	has record
Definition	an MLR Record instance describing the learning resource
Linguistic indicator	non-linguistic
Domain	*Learning Resource* (ISO_IEC_19788-1:2011::RC0002)
Codomain	*MLR Record* (ISO_IEC_19788-8:2015::RC0001)
Content value rules	N/A
Refines	—
Example(s)	—
Note(s)	There may be more than one MLR record describing a given learning resource.

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5.2 Record Language (DES0200)

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Data element specification	
Identifier	ISO_IEC_19788-8:2015::DES0200
Data element specification attributes	
Property name	record language
Definition	default language code for the linguistic literal values in the MLR Record instance
Linguistic indicator	non-linguistic
Domain	*MLR Record* (ISO_IEC_19788-8:2015::RC0001)
Codomain	literal
Content value rules	RS_DES0200
Refines	—
Example(s)[a)]	1) eng 2) fra 3) ike
Note(s)	—
a) eng: English; fra: French; ike: Eastern Canadian Inuktitut.	

ID: RS_DES0200	
Rule_ID	Rule statement/Example(s) & Note(s)
01	Language code from ISO 639-3.

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5.3 Source Record ID (DES0300)

Data element specification	
Identifier	ISO_IEC_19788-8:2015::DES0300
Data element specification attributes	
Property name	source record ID
Definition	when an MLR record is the result of a crosswalk mapping, identification of the original record
Linguistic indicator	non-linguistic
Domain	*MLR Record* (ISO_IEC_19788-8:2015::RC0001)
Codomain	literal
Content value rules	MLR STRING (ISO_IEC_19788-1:2011::PRS0001)
Refines	—
Example(s)	—
Note(s)	—

5.4 Source Record Schema (DES0400)

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Data element specification	
Identifier	ISO_IEC_19788-8:2015::DES0400
Data element specification attributes	
Property name	source record schema
Definition	when an MLR record is the result of a crosswalk mapping, metadata schema of the original record
Linguistic indicator	linguistic
Domain	*MLR Record* (ISO_IEC_19788-8:2015::RC0001)
Codomain	literal
Content value rules	MLR STRING (ISO_IEC_19788-1:2011::PRS0001)
Refines	—
Example(s)	1) DC (English) 2) LOMFR (French) 3) Normetic (French) 4) KEM2007 (English)
Note(s)	—

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5.5 Previous Version (DES0500)

Data element specification	
Identifier	ISO_IEC_19788-8:2015::DES0500
Data element specification attributes	
Property name	previous version
Definition	previous version of the MLR record
Linguistic indicator	non-linguistic

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Data element specification	
Domain	*MLR Record* (ISO_IEC_19788-8:2015::RC0001)
Codomain	*MLR Record* (ISO_IEC_19788-8:2015::RC0001)
Content value rules	N/A
Refines	—
Example(s)	—
Note(s)	The previous version of an MLR record describing a given learning resource and related resources is distinct from the MLR record under consideration. Using the property ”previous version”, one can keep track of the sequence of modifications to the description of a learning resource and related resources.

5.6 Has Mutable Record (DES0600)

Data element specification	
Identifier	ISO_IEC_19788-8:2015::DES0600
Data element specification attributes	
Property name	has mutable record
Definition	a Mutable MLR Record instance describing the learning resource
Linguistic indicator	non-linguistic
Domain	*Learning Resource* (ISO_IEC_19788-1:2011::RC0002)
Codomain	*Mutable MLR Record* (ISO_IEC_19788-8:2015::RC0002)
Content value rules	N/A
Refines	—
Example(s)	—
Note(s)	There may be more than one mutable MLR record describing a given learning resource.

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5.7 Record Identifier (DES0700)

Data element specification	
Identifier	ISO_IEC_19788-8:2015::DES0700
Data element specification attributes	
Property name	record identifier
Definition	identifier for the instance of the Mutable MLR Record resource class
Linguistic indicator	non-linguistic
Domain	*Mutable MLR Record* (ISO_IEC_19788-8:2015::RC0002)
Codomain	literal
Content value rules	MLR STRING (ISO_IEC_19788-1:2011::PRS0001)
Refines	—
Example(s)	Canal-U_Ocms/8670

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Data element specification	
Note(s)	If the mutable MLR records are kept in a database, then the natural or surrogate database record key is often used as record identifier.

5.8 Record Last Update (DES0800)

Data element specification	
Identifier	ISO_IEC_19788-8:2015::DES0800
Data element specification attributes	
Property name	record last update
Definition	date/time of the most recent modification to the content of the Mutable MLR Record instance
Linguistic indicator	non-linguistic
Domain	*Mutable MLR Record* (ISO_IEC_19788-8:2015::RC0002)
Codomain	literal
Content value rules	DATE_&_TIME (ISO_IEC_19788-1:2011::PRS0003)
Refines	—
Example(s)	1999-04-25T10:25Z
Note(s)	1) Coordinated Universal Time (UTC) should be used: either directly or by indicating a time offset from UTC. 2) If the MLR records are kept in a database, then this information may be used when harvesting records, e.g. with OAI-PMH compliant tools.

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5.9 Record Repository (DES0900)

Data element specification	
Identifier	ISO_IEC_19788-8:2015::DES0900
Data element specification attributes	
Property name	record repository
Definition	a repository the Mutable MLR Record instance belongs to
Linguistic indicator	non-linguistic
Domain	*Mutable MLR Record* (ISO_IEC_19788-8:2015::RC0002)
Codomain	literal
Content value rules	MLR STRING (ISO_IEC_19788-1:2011::PRS0001)
Refines	—
Example(s)	Le monde en image — http://www.ccdm.qc.ca/monde/
Note(s)	—

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