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## ISO/IEC 19788-1

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

#### Part 1: Framework

*Technologies de l'information pour l'apprentissage, l'éducation et  
la formation — Métadonnées pour ressources d'apprentissage —  
Partie 1: Cadre de référence*

Second edition  
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CP 401 • Ch. de Blandonnet 8  
CH-1214 Vernier, Geneva  
Phone: +41 22 749 01 11  
Email: [copyright@iso.org](mailto:copyright@iso.org)  
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This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 36, *Information technology for learning, education and training*.

This second edition cancels and replaces the first edition (ISO/IEC 19788-1:2011), which has been technically revised. It also incorporates amendment 1 (ISO/IEC 19788-1:2011/AMD 1:2014).

The main changes are as follows:

- Generic terms and definitions, previously in ISO/IEC 19788-8:2015 (Annex E) have been added to [Clause 3](#);
- An attribute "label" has been added to MLR specification templates for resource classes, properties (DEs in ISO/IEC 19788-1:2011), application profiles, generic content rule sets, vocabularies, and vocabulary terms;
- "Data element specification" has been renamed to "property specification";
- Redefining what an application profile is and deleting data element groups (DEGs);
- [Clause 8](#) about MLR Vocabularies has been added. This clause solves a long-standing problem with the MLR Standard: The non-existence of a normalized way to specify/describe MLR vocabulary in a technology independent way;
- the entire content of the document has been reviewed and modified where necessary.

A list of all parts in the ISO/IEC 19788 series can be found on the ISO and IEC websites.

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## 0.1 Purpose and overview

This document was originally designed as a framework for the specification of metadata describing learning resources (hence its title MLR: Metadata for Learning Resources). Its use in SC36 to specify metadata about competences or accessibility has shown that its scope is broader than originally intended.

This document is about providing a metadata framework relevant to several committees and sectors and is of crucial importance to ensure coherence across standardization deliverables. The framework provides specification of generic entities and rules governing their use. This would then be used to define the semantic (meaning) of any type of information in a predictable way. This framework is information-technology-neutral and defines a set of common approaches, i.e. methodologies and constructs. The key principles are informed by a user requirements-driven context with the aim of supporting multilingual and cultural adaptability requirements from a global perspective, providing a way to link semantics to content.

This document includes rules for the assignment and management of identifiers and the development of subsequent documents fulfilling specific user needs.

Additionally, this document specifies how to define application profiles.

Some generic resource classes and properties are included in this document but there are few of them. Excluded from this document are the specification of bindings for properties (e.g. XML or RDF/OWL bindings) and the description of particular application profiles. These will be considered in subsequent documents. Nevertheless, code may be used in an informal way in examples.

The primary purpose of the ISO/IEC 19788 series is to facilitate: (1) the description of a learning resource by providing a standards-based approach to the identification and specification of the properties required to describe a learning resource, for example, 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 (all parts) is based on identified user requirements.

At the same time, ISO/IEC 19788 (all parts) takes into account the diversity of cultural and linguistic contexts in which learning resources and their metadata are likely to be created and exploited. ISO/IEC 19788 (all parts) also facilitates the sharing and reuse of learning resource descriptions.

ISO/IEC 19788 (all parts) aims to specify properties relating to learning resources to be expressed in a range of established formats, providing some compatibility with IEEE 1484.12.1-2002,<sup>[2]</sup> ISO 15836-1:2017<sup>[4]</sup> and ISO 15836-2:2019<sup>[5]</sup> (as exemplified by ISO/IEC 19788-2 and amendment), while also addressing user-driven requirements and uses not explicitly addressed in those two standards. These properties are used to form the description of a learning resource.

In addition to having this document, ISO/IEC 19788 (all parts) is modularly structured with all subsequent parts having a distinct scope. Some of these parts represent a specified set of user requirements for the identification and specification of properties having a particular focus and intended use in the description of a learning resource. This includes collections of properties focused on technical perspectives, educational (pedagogical) aspects, etc.

## 0.2 About the description of resources

Properties are the basis of the resource description. However, not all properties are relevant to describe all resources. Indeed, a person is not described like a book. So, when specifying a property, a type of resources containing all the entities the property may be applied to, a domain for the property is provided.

An important aspect of MLR is the notion of classes of resources, i.e., sets of resources sharing common characteristics (e.g. books, people). Classes can be linked together by an inheritance relationship. This notion is to be understood as close to the notion of subset. If class A inherits from class B then all instances of A are also instances of B and instances of all classes from which B inherits.

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a property applies to a resource, then the resource in question is an instance of the class that is declared as the domain of the property.

The description of a resource is done by making explicit the characteristics of the resource in consideration. Each characteristic is made explicit by specifying the property involved, the resource described and the value of the property for that resource. This is the purpose of MLR data elements.

The values of properties can be either data like a specific date (a date of birth for example) or references to other resources (the author of a book being itself a resource with its own characteristics that can itself linked to other resources and so on).

### 0.3 About neutral identifiers

A base principle of the approach of this document is that it is linguistically and culturally neutral, even if its text is in English. This is achieved by using language and culture-neutral identifiers. Thus, a designation in the desired language can be associated with a given identifier (e.g. of a property, of a vocabulary term), meaning the same identifier can have as many different names as languages.

Identifiers for MLR entities (properties, resource classes, generic content value rule sets, application profiles, vocabularies and vocabulary terms) are unique reference and permanent tags.

Those identifiers are:

- language-neutral,
- unambiguous in the identification of a particular MLR entity in ISO/IEC 19788 (all parts), related standards or any other type of document based on this document,
- be used to reference and cross-reference MLR entities,
- be information technology independent,
- be as self-explanatory as possible.

The design of MLR identifiers is explained in [Annex B](#).

Canonical identifiers for MLR entities provide a way to denote the common "essence" of entities that are essentially the same. Usually, the description associated with such an identifier is the latest version of the specification/description of the entity. Canonical identifiers are preferentially used if they exist. The design of MLR canonical identifiers is explained in [Annex C](#).

Non-canonical identifiers are only used by persons writing normative documents based on this document. Using non-canonical identifiers allows to keep the history of modifications to the definitions.

In ISO/IEC 19788 (all parts), URI/IRI are used as identifiers for resources (they denote resources). A URI/IRI denoting a resource based on HTTP uses the 'http' scheme, not the 'https' scheme. Any URI/IRI identifier using the 'https' scheme will be deemed to be the identifier obtained by replacing 'https' by 'http'.