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Information technology for learning, education, and training — Learner mobility achievement information (LMAI)

Technologies de l'information — Éducation, formation et apprentissage — Informations pour la réalisation de la mobilité des apprenants



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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

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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.

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).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 36, *Information technology for learning, education and training*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Introduction

Global education has reached a level of maturity where the demand for the recording and exchange of learner mobility information needs to be efficiently supported by technical interoperability standards.

Several relevant standardization efforts relating to this work were identified and significant national expertise has been developed to date. However, harmonization was deemed necessary towards an international solution, in order to provide viable support for emerging international student management information systems and dissuade service providers from developing proprietary services and platforms.

The results of the current and future work about learner mobility aspire to support the development of a new generation of technology-enhanced services for learners (learning and employment opportunities exploration), higher education institutions (certification or augmentation of learner information), employers (workplace descriptions, recruiting and development of learners' competences) and other stakeholders of learning, education, and training internationally, the national bodies and their governments and ministries, etc. For the purposes of this document, learner mobility means the movement of learners from one region or country to another.

The learner mobility achievement information (LMAI) model directly addresses the international requirement for rapid implementation and dissemination of the institution-owned transparency information tools internationally. It has been developed as a generic model for representing the institution attested achievements of a learner within a formal learning setting, resulting from the learner's participation in one or more learning opportunity instances and including any available associated results.

This document specifies a framework of the generic LMAI model that supports the expression of institution-owned learner achievement information and the formation of official achievement reports (e.g. the learner's transcript of records) and transparency documents (e.g. digital diploma supplement). The framework model supports additional learner mobility achievement structures and tools. It standardizes additional information entities (e.g., intended learning outcomes, assessment processes, etc.). Related standardization activities are underway to provide other important extensions to LMAI.

The LMAI model has been developed to be:

— lightweight: taking into consideration existing and emerging educational practice processes and the relevant educational policies

— easy-to-implement: in order to ensure a rapid uptake by stakeholders of learning, education and training throughout the world (higher education institutions, learners, employers, service providers, etc.)

The accompanying proposed digital diploma supplement application profile meets the general purposes of:

— the use of academic achievements abroad: in continuing education or in seeking job opportunities;

— the admission of students or graduates in domestic institutions and educational organizations and those abroad: acknowledgment of credits or transfer of credits accumulated in domestic institutions moving from one institution/educational organization to another;

— the expression of the level, content and nature of qualifications to potential employers both nationally and at an international level;

— the enhancement of internal and international student mobility, from one educational organization to another, or from one branch of studies to another;

— the proper integration of foreign workers into a country's employment setting;

— the standardization of higher education qualifications, either in academic or non-academic paths;

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— the establishment of good practices in the recognition procedures of qualifications among higher education institutions.

NOTE 2 The DDS application profile of LMAI focuses on the expression of information regarding the qualification awarded to a learner upon completion of a formal educational programme.

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Information technology for learning, education, and training — Learner mobility achievement information (LMAI)

1 Scope

This document defines a model for the recording and exchange of learner achievement information among student information systems (SIS) (also known as student management information systems), as well as the aggregation of information by third party suppliers.

In addition, this document defines refinements to the learner mobility achievement award (LMAI) model for representing the digital diploma supplement (DDS).

NOTE The proposed model proposed is not intended to define the representation of the entire spectrum of learner mobility information but to define the formally structured representation of official, institutionally attested achievement information for learners engaged in formal learning processes, in order to facilitate its recording and subsequent exchange within any international area within which learner mobility is possible. Achievement information structured and presented in compliance with this document could, of course, be used for other purposes, for instance, to provide descriptions of achievement to enrich a learner-owned report in an e-portfolio. However, guidance on the document and the organisation of information for purposes other than the representation of formal achievement reports is outside the scope of this document.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at https://www.iso.org/obp.

3.1
assessment result
recorded outcome of a process used to evaluate, measure and document the progress of a learner

3.2
awarding body
organization that gives *credit* (3.3) or *qualifications* (3.19)

Note 1 to entry: The same organization may also be a *learning opportunity provider* (3.14) or an *issuer* (3.10).

3.3
credit
unit of learning or study that counts towards a *qualification* (3.19), such as a degree or *diploma* (3.6)

3.4
credit scheme
framework (3.6) that defines units of learning or study that can be accumulated by learners and transferred from an educational organization or programme of study to another

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3.5
credit value
particular amount of credit

3.6
diploma
official documentary record of the awarding of a qualification

3.7
diploma supplement
LMAI report (3.8) that contains digital diploma supplement information

3.8
LMAI report
learning mobility achievement information report
document that contains achievement information for a single learner within a formal educational setting

3.9
framework
system of concepts, definitions and provisions through which educational practices are ordered, related and articulated

Note 1 to entry: A *credit scheme* (3.4) is a specific example of a framework.

3.10
issuer
body that creates and distributes the *LMAI report* (3.8)

Note 1 to entry: The same body may also be a learning opportunity provider or an awarding body.

3.11
learner
student
entity that learns

Note 1 to entry: A learner for the purposes of this document can be more specifically defined as an individual currently or formerly enrolled in a formal learning opportunity, where the learning opportunity (3.12) may be a part or whole programme of study, a seminar, work experience, a single course, etc.

3.12
learning opportunity
formally specified education or training process

3.13
learning opportunity instance
single presentation of a *learning opportunity* (3.12)

3.14
learning opportunity provider
organization that validates or advertises learning opportunity specifications, or that runs *learning opportunity instances* (3.13)

Note 1 to entry: A learning opportunity provider is a kind of LET institution or a type of learning service provider. LET institution is defined in ISO/IEC/TR 24763:2011, E.7.

Note 2 to entry: The same organization may also be an issuer (3.10) or an awarding body.

3.15
learning opportunity specification
description of a *learning opportunity* (3.12), consisting of information that will be consistent across multiple instances of the learning opportunity

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3.16
level
educational level
one of a set of terms, properly defined within a *framework* (3.9) or a *credit scheme* (3.4), applied to an entity in order to group it together with other entities relevant to the same stage of education

3.17
module
course unit in a system in which each course unit carries the same number of *credits* (3.3) or a multiple thereof

3.18
programme
set of *learning opportunities* (3.12) for successful completion of which the *learner* (3.11) can be awarded a specified *qualification* (3.19)

3.19
qualification
status awarded to or conferred on a learner by an awarding body

3.20
transcript
collection of information, represented in a learner mobility achievement report, about learning opportunity instances taken by a learner, including any available associated results for that learner

4 Abbreviated terms

AP	application profile
DCAM	Dublin Core Abstract Model
DCMI	Dublin Core Metadata Initiative
DDS	digital diploma supplement
DS	diploma supplement
DSP	description set profile
LM	learner mobility
LMAI	learner mobility achievement information
MLO-AD	metadata for learning opportunities - advertising
PURL	persistent uniform resource locator
QF	qualifications framework
RDF	resource description framework
SF	Singapore Framework
SIS	student information system
SMIS	student management information system
UML	unified modelling language

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