CEN

WORKSHOP

AGREEMENT

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English version

Metadata for Learning Opportunities (MLO) - Advertising

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The formal process followed by the Workshop in the development of this Workshop Agreement has been endorsed by the National Members of CEN but neither the National Members of CEN nor the CEN Management Centre can be held accountable for the technical content of this CEN Workshop Agreement or possible conflicts with standards or legislation.

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Foreword

The MLO work has as its background in the identified need to harmonise different specifications around Europe for describing and exchanging information about courses, elearning offerings, and learning opportunities.

This project was initiated by Norway and had its basis in the Norwegian CDM (Course Description Metadata) work. The CDM specification has been adopted by French universities with some modifications in a project co-ordinated by the French Ministry of Education. In Sweden they used EMIL (Education Information Markup Language), in Germany DIN published (December 2006) the specification PAS 1068 developed in consensus by its DIN-workshop, and the UK had developed XCRI (eXchanging Course-Related Information) into a much used service. In 2004 a project was proposed by the CEN/ISSS WS-LT for harmonisation of the existing specifications and to identify needs and use cases by other countries. As a number of experts and national interests found this a serious market demand, a group of experts in the field set out to do this work on a voluntary unpaid basis.

The group that set out to develop a set of standards on MLO consists of 21 experts from 12 countries and vendors within Europe.

This group has performed the work by regularly on line meetings and physical meetings co located with the CEN WS-LT meetings. To collaborate and develop this document a wiki hosted by Teria AS has been used.

The work has been led by Erlend Øverby from Hypatia AS, Norway. Other experts contributing to the work has been: Scott Wilson (UK, JISC-Cetis), Mark Stubbs (UK, MMU), Kristina Unverricht (Germany, User council of DIN), Marc Van Collie (France, EifEL), Christian M. Stracke (Germany, Vice-Chair CEN TC 353), Ola Berge (Norway, NSSL), Paul Bessems (Netherland, IBLC), Andy Heath (UK, Axelrod consulting), Peter Karlberg (Sweden, MSU), Leopold Kause (Switzerland, UBS AG), Simone Ravaioli (Italy, KION), Sandro Cacciamani (Italy, KION), Cleo Sgouropoulou (Greece, ELOT), Gérard Vidal (France, ENS Lyon), Geir Vangen (Norway, USIT/UiO), Are Rikardsen (Norway, Utdanning.no), Jan Pawlowski (Finland, Chair of CEN/ISSS WS-LT), Tore Hoel (Norway, Vice Chair of CEN/ISSS WS-LT), Mike Collett (UK, Chair CEN TC 353), Linda Feng (Oracle/IMS Enterprise2).

The production of this CEN Workshop Agreement (CWA) specifying the Metadata for Learning Opportunities (MLO) – Advertising, was discussed at the meeting of Workshop Learning Technologies on 13 October 2008 in Louvain and was approved following an electronic process, which finished on 7 November 2008.

A list of companies, which have supported the document's contents, is available from the CEN Management Centre on request.

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Comments or suggestions from the users of the CEN Workshop Agreement are welcome and should be addressed to the CEN Management Centre.

1. Introduction

MLO-Advertising (MLO-AD) is a standard addressing metadata sufficient for advertising a learning opportunity.

The goal of MLO-AD is to provide information about a learning opportunity, to enable the learner to make a decision if there is a need for more information about the learning opportunity, and where to find that information.

The group has also aimed at developing a lightweight standard that fits well with existing business processes and technologies. The MLO-AD standard is also designed to facilitate semantic technologies and web architectures to support several mechanisms for exchange of the information and aggregation of information by third party service suppliers. Finally, the goal has been to make the standard easy to implement to ensure a rapid uptake by the European countries.

At the design level, the group wanted the standard to support the ECTS descriptions and the exchange of ECTS information.

The standard only describes the datamodel for learning opportunities, and does not give any guidance on the vocabularies that are needed to ensure semantic interoperability between different educational and jurisdictional domains. The reason for not addressing vocabularies is that there is a need for frequently updating and maintaining the vocabularies, and that many vocabularies are mandated by the educational and jurisdictional domains where the standard is used. Therefore all vocabularies will be maintained as separate CEN Workshop Agreements (CWAs) by the CEN/ISSS WS-LT.

In the future the MLO set of standards will be further developed to describe Metadata for Learning Opportunities related to the Europass system used throughout Europe. Based on other needs for metadata related to Learning Opportunities new standardisation projects could also be launched.

NOTE: The *mlo:* namespaces used in this document are provisional and will be changed pending approval by CEN.

2. Scope

This standard defines the electronic representation of Learning Opportunities in order to facilitate their advertising and subsequent discovery by prospective learners.

Key users of the standard will be:

- those who provide opportunities for learning and wish to advertise them;
- those who offer electronic search services that aggregate results from multiple Learning Opportunity providers;
- those who wish to compare Learning Opportunities that have been represented electronically.

The standard presents an abstract model for representing Learning Opportunities. The model specifies three resources about which metadata can be stored to facilitate advertising of Learning Opportunities:

1. Learning Opportunity Provider;
2. Learning Opportunity Specification; and
3. Learning Opportunity Instance.

The standard specifies relations between the three resources and recommends a core set of metadata for each.

The model proposed within the standard is not intended to define the electronic representation of Learning Objects in general - the scope of the standard is restricted to definine the electronic represention of Learning Opportunities to facilitate their advertising and subsequent discovery by learners. Metadata collected and presented for the purpose of advertising Learning Opportunities may, of course, be used for other purposes - for instance, providing detailed description of a formal learning opportunity to enrich a transcript that showed a learner's educational history. However, guidance on the specification and organisation of metadata for purposes other than advertising Learning Opportunities is outside the scope of this standard.

3. Conformance

Conforming Instances

A s*trictly conforming instance* is a set of structured information constituted only of objects and statements defined by the classes and properties of this standard and *fully qualified refinements* of the properties defined in this standard.

A *fully qualified refinement* is defined for the purpose of conformance as a property that explicitly extends a property defined by this standard. A fully qualified refinement must be capable of being processed according to the semantics of the property it extends.

A *conforming instance* may contain additional objects and properties.

NOTE: As there are no cardinality restrictions on any of the properties of this standard, an instance consisting only of one or more objects conforming to classes defined in this standard but without any properties is a strictly conforming instance.

Conforming Bindings

A *strictly conforming binding* is constituted only of bindings to an exchange format of the classes and properties defined by this standard and fully qualified refinements of the properties defined in this standard.

A *conforming binding* may contain additional properties that do not necessarily extend or map to the properties defined in this standard.

Both *strictly conforming bindings* and c*onforming bindings* must be capable of generating and validating instances that can be automatically converted to a strictly conforming instance of this standard.

Both *strictly conforming bindings* and *conforming bindings* may impose additional constraints upon the values of properties defined in this standard.

Both *strictly conforming bindings* and *conforming bindings* may impose cardinality constraints on properties defined in this standard.

Both *strictly conforming bindings* and *conforming bindings* may impost cardinality constraints on associations between instances of the classes defined in this standard.

NOTE: Attention is drawn to the GRRDL (Gleaning Resource Descriptions from Dialects of Languages), and XSLT (XSL Transformations), both recommendations of W3C.

Conforming Applications

A *conforming provider* must be capable of generating and sharing (1) conforming instances , and/or (2) instances that conform to a conforming binding.

A *conforming aggregator* must be capable of processing (1) conforming instances, and/or (2) instances that conform to a conforming binding.