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Information technology — Learning, education and training — Collaborative technology — Collaborative workplace —

Part 2: Collaborative environment data model

Technologies de l'information — Apprentissage, éducation et formation — Technologies collaboratives — Lieu de travail collaboratif —

Partie 2: Modèle de données de l'environnement collaboratif

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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).

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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

The committee responsible for this document is 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 19778-2:2008), of which it constitutes a minor revision.

ISO/IEC 19778 consists of the following parts, under the general title *Information technology — Learning, education and training — Collaborative technology — Collaborative workplace*:

— *Part 1: Collaborative workplace data model*

— *Part 2: Collaborative environment data model*

— *Part 3: Collaborative group data model*

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Introduction

ISO/IEC 19778 provides *Data Models* for specifying *collaborative workplaces* and their components. ISO/IEC 19778-1 provides general information for all parts, and specifies a *Data Model* which, by reference, composes the *Data Model instantiations* of the two main components of a *collaborative workplace*: the *collaborative environment* and the *collaborative group*. This part of ISO/IEC 19778 provides the *Data Model* for the *collaborative environment* and specifies information related to the service aspects of a *collaborative workplace*. ISO/IEC 19778-3 provides the *Data Model* for the *collaborative group* and specifies information related to the *roles* and the membership of a *collaborative workplace*.

The main accomplishment of this part of ISO/IEC 19778 is to specify the composition of the *collaborative tools* which are integrated in the *collaborative service(s)* of a *collaborative workplace*. As *collaborative tools* frequently provide several *collaborative functions*, these *collaborative functions* are also identified in the *collaborative environment Data Model*.

The purposes of this part of ISO/IEC 19778 are the following:

— to provide a standardized way of defining and instantiating, as an independent entity, the service(s) and associated entities of a *collaborative workplace* (this is done by associating these services and entities with a *collaborative environment* identifier unique within a particular domain or application context);

— to specify the technical and infrastructural requirements of a *collaborative workplace* for the purpose of set-up, employment, management, administration, and evaluation of its *collaborative environment.*

The detailed specification of the *collaborative tools* and their *collaborative functions* is not provided in this part of ISO/IEC 19778; however, it may be linked to the *collaborative environment Data Model instantiations* by referring to "potential further specifications or standards" that are not identified and possibly do not yet even exist. (One of the intentions of this part of ISO/IEC 19778 is to encourage adopters to develop and harmonize such specifications.)

Linkages to "potential further specifications or standards" are constituted by employing a "source/value" approach, where the value (e.g. the name of a *collaborative tool* or *collaborative function*) is taken from a "source", a specification or standard, which declares the names and specifies the details of *collaborative tools* or *collaborative functions*. The "source" itself is specified by reference, using a URL. The intention of this "source/value" approach is to provide a simple method for linking developing specifications or standards to the *Data Model* of this part of ISO/IEC 19778 without needing to identify them beforehand. This highly flexible method reflects the fact that ISO/IEC 19778-2 is a part of a multipart standard that represents prospective technology. Figure 1 illustrates how this is achieved.

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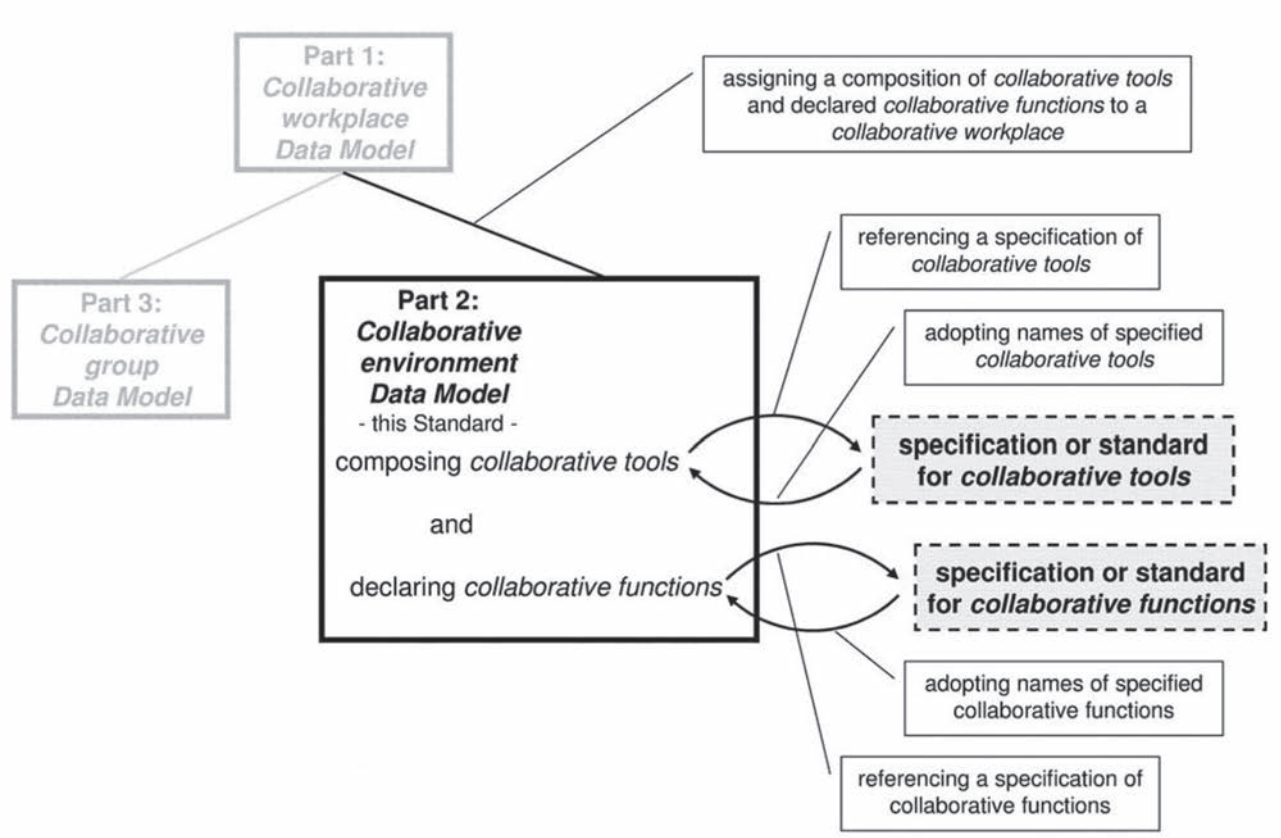


Figure 1 — Composing *collaborative tools* and declaring *collaborative functions* in this part of ISO/IEC 19778

In this part of ISO/IEC 19778, "composing *collaborative tools*" and "declaring their *collaborative functions*" are generally performed by specifying names of *collaborative tools* and *collaborative functions*. Further information on these *collaborative tools* and *collaborative functions* may be specified in "potential further specifications or standards" which are not included in this part of ISO/IEC 19778. The adopters of this part of ISO/IEC 19778 may decide whether or not to use such "potential further specifications or standards". If no "potential further specifications or standards" are used, the names and properties of *collaborative tools* and *collaborative functions* need to be consistently known in the user community. This, however, also means that the interoperability of *Data Model instantiations* of this kind is limited to this "harmonized" user community.

Where the need for broader interoperability exists, external "specifications or standards" are required. They would at least define a set of *collaborative tools* or *collaborative functions*, provide names for them, and describe their properties. Of course, such "specifications or standards" could be very simple and general. However, they could be highly sophisticated and detailed as well. Where a *collaborative environment Data Model instantiation* makes use of such an external "specification or standard", it references it and adopts the names for *collaborative tools* or *collaborative functions* as shown in Figure 1.

Using this first edition of this part of ISO/IEC 19778 provides utmost flexibility at the risk of a low-level of interoperability. It allows adopters to experiment with diverse specifications for *collaborative tools* or *collaborative functions*. It is intended as a step towards broader harmonization of *collaborative tools* or *collaborative functions* with respect to their specification and naming. This expected progress in harmonization will be reflected by future editions of this part of ISO/IEC 19778, while today's users can employ this first edition instantly.

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Information technology — Learning, education and training — Collaborative technology — Collaborative workplace —

Part 2: Collaborative environment data model

1 Scope

1.1 Statement of scope

This part of ISO/IEC 19778 specifies the *Data Model* for a *collaborative environment*.

The *collaborative environment Data Model* composes *collaborative tools* and declares their *collaborative functions* by specifying their names. These names can be used as references to *collaborative tools* and *collaborative functions* specified in detail by further specifications or standards. Where no such specifications or standards are available or identified, the provision of descriptions for human interpretation may support harmonized use of these names.

1.2 Subjects and aspects not currently addressed

In future editions of this part of ISO/IEC 19778, extended support for adapting *collaborative environments* to preferences and needs of *participants* may be provided. Such support can be gained by prioritizing the *collaborative effects* (defining which *collaborative effects* are intended to be supported) in contrast to the *collaborative tools* and *collaborative functions* (defining by which technical provisions the intended *collaborative effects* are supported).

1.3 Excluded subjects and aspects

Subjects and aspects not provided by this part of ISO/IEC 19778, but which it is anticipated will be provided by further specifications or standards include the following:

— the detailed specification of *collaborative tools* or *collaborative functions* (such specification is left to further specifications or standards and means service component harmonization which is excluded from this part of ISO/IEC 19778);

— the detailed specification of *collaborative effects* (such specification is left to further specifications or standards and addresses application modelling which is excluded from this part of ISO/IEC 19778);

— the specification of methods for integrating *collaborative tools* or *collaborative functions* into services (as this affects service modelling which is excluded from this part of ISO/IEC 19778).

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 19778-1:—[1)], *Information technology — Learning, education and training — Collaborative technology — Collaborative workplace — Part 1: Collaborative workplace data model*

1) To be published.

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3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 19778-1 apply.

4 Abbreviated terms and acronyms

NOTE Some of the abbreviated terms or acronyms in this Clause represent terms defined in ISO/IEC 19778-1:—, Clause 3. The term numbers are provided in brackets.

AE Aggregating Element (see 3.1.1)

CE Collaborative Environment (see 3.2.3)

CW Collaborative Workplace (see 3.2.8)

DE Data Element (see 3.1.5)

DM Data Model (see 3.1.7)

DME Data Model Element (see 3.1.8)

ID Identifier

Ref Reference

URI Uniform Resource Identifier

URL Uniform Resource Locator (world wide web address)

XML eXtensible Markup Language

XSD XML Schema Definition

5 Collaborative environment Data Model

5.1 Data Model representation

The table-based *Data Model* representation used here corresponds to the specification provided in ISO/IEC 19778-1:—, 5.1.

5.2 Collaborative environment Data Model diagram

Figure 2 provides a relational overview for the *collaborative environment Data Model* as specified in this part of ISO/IEC 19778. This diagram also indicates specifications or standards which are as of yet unidentified and out of scope for this part of ISO/IEC 19778, but which may play a significant role in its implementation.

The *Data Model* is outlined inside the large dashed box. The *Root Element* on top represents the basis for this *Data Model* and is not represented in the table representation. The indices of the branches are denoted.

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