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

**Part 2:
Collaborative environment data model**

iTeh STANDARD PREVIEW
(standards.iteh.ai)
*Technologies de l'information — Apprentissage, éducation et
formation — Technologies collaboratives — Lieu de travail
collaboratif*

Partie 2: Modèle de données de l'environnement collaboratif

ISO/IEC 19778-2:2008

<https://standards.iteh.ai/catalog/standards/sist/4793d8af-8f86-4dbc-86aa-37f9f7982c0f/iso-iec-19778-2-2008>

PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

ISO/IEC 19778-2:2008

<https://standards.iteh.ai/catalog/standards/sist/4793d8af-8f86-4dbc-86aa-37f9f7982c0f/iso-iec-19778-2-2008>



COPYRIGHT PROTECTED DOCUMENT

© ISO/IEC 2008

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword.....	iv
Introduction	v
1 Scope	1
1.1 Statement of scope.....	1
1.2 Subjects and aspects not currently addressed	1
1.3 Excluded subjects and aspects	1
2 Normative references	1
3 Terms and definitions	2
4 Abbreviations and acronyms	2
5 Collaborative environment Data Model	2
5.1 Data Model representation.....	2
5.2 Collaborative environment Data Model diagram	2
5.3 Collaborative environment Data Model specification	3
5.4 Supplementing information for DMEs of the CE DM.....	8
5.4.1 AE CE_General	8
5.4.2 DE CE_Name	8
5.4.3 DE CE_Description	8
5.4.4 AE CE_ID	8
5.4.5 DE CE_ID_source.....	9
5.4.6 DE CE_ID_value	9
5.4.7 AE CW_ID-Ref	9
5.4.8 DE CW_ID-Ref_source	10
5.4.9 DE CW_ID-Ref_value	10
5.4.10 AE CE_Tools	10
5.4.11 DE CE_Tools_spec_source	10
5.4.12 AE CE_Tool	10
5.4.13 DE CE_Tool_name	11
5.4.14 DE CE_Tool_description	11
5.4.15 AE CE_Functions.....	11
5.4.16 DE CE_Functions_spec_source.....	11
5.4.17 AE CE_Function.....	11
5.4.18 DE CE_Function_name	11
5.4.19 DE CE_Function_description	11
6 Conformance	12
Annex A (informative) Alphabetical list of terms	13
Annex B (informative) Examples for collaborative functions	14
Bibliography	20

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

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.

ISO/IEC 19778-2 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 36, *Information technology for learning, education and training*.

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* [ISO/IEC 19778-2:2008](https://standards.iso.org/standards/catalog/standards/sist/4793d8af-8f86-4dbc-86aa-379cf7982c0f/iso-iec-19778-2-2008)
- *Part 2: Collaborative environment data model*
- *Part 3: Collaborative group data model*

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 purpose of this part of ISO/IEC 19778 is:

- 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); and
- 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.

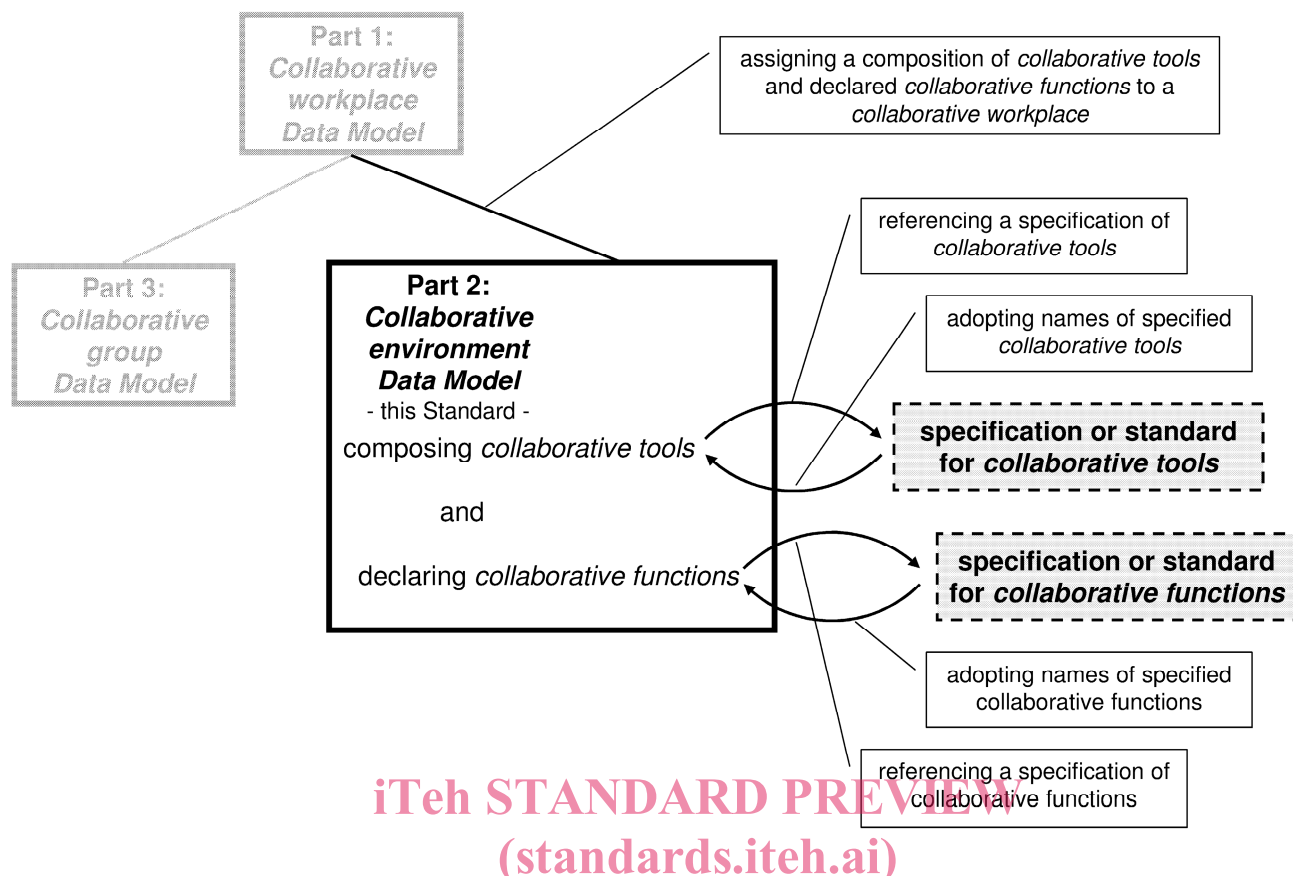


Figure 1 — Composing *collaborative tools* and declaring *collaborative functions* in this part of ISO/IEC 19778

<https://standards.iteh.ai/catalog/standards/sist/4793d8af-8f86-4dbc-86aa-379f7982e0f5/iso-iec-19778-2-2008>

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.

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 may 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 may 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 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 referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 10646:2003, *Information technology — Universal Multiple-Octet Coded Character Set (UCS)*

ISO/IEC 11404:2007, *Information technology — General-Purpose Datatypes (GPD)*

ISO/IEC 19778-1:2008, *Information technology — Learning, education and training — Collaborative technology — Collaborative workplace — Part 1: Collaborative workplace data model*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 19778-1:2008 apply.

4 Abbreviations and acronyms

NOTE Some of the abbreviations or acronyms in this clause represent terms defined in Clause 3 of ISO/IEC 19778-1:2008. 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

STANDARD PREVIEW
(standards.iteh.ai)

<https://standards.iteh.ai/catalog/standards/sist/4793d8af-8f86-4dbc-86aa-37f9f7982c0f/iso-iec-19778-2-2008>

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 19778-1:2008, 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.

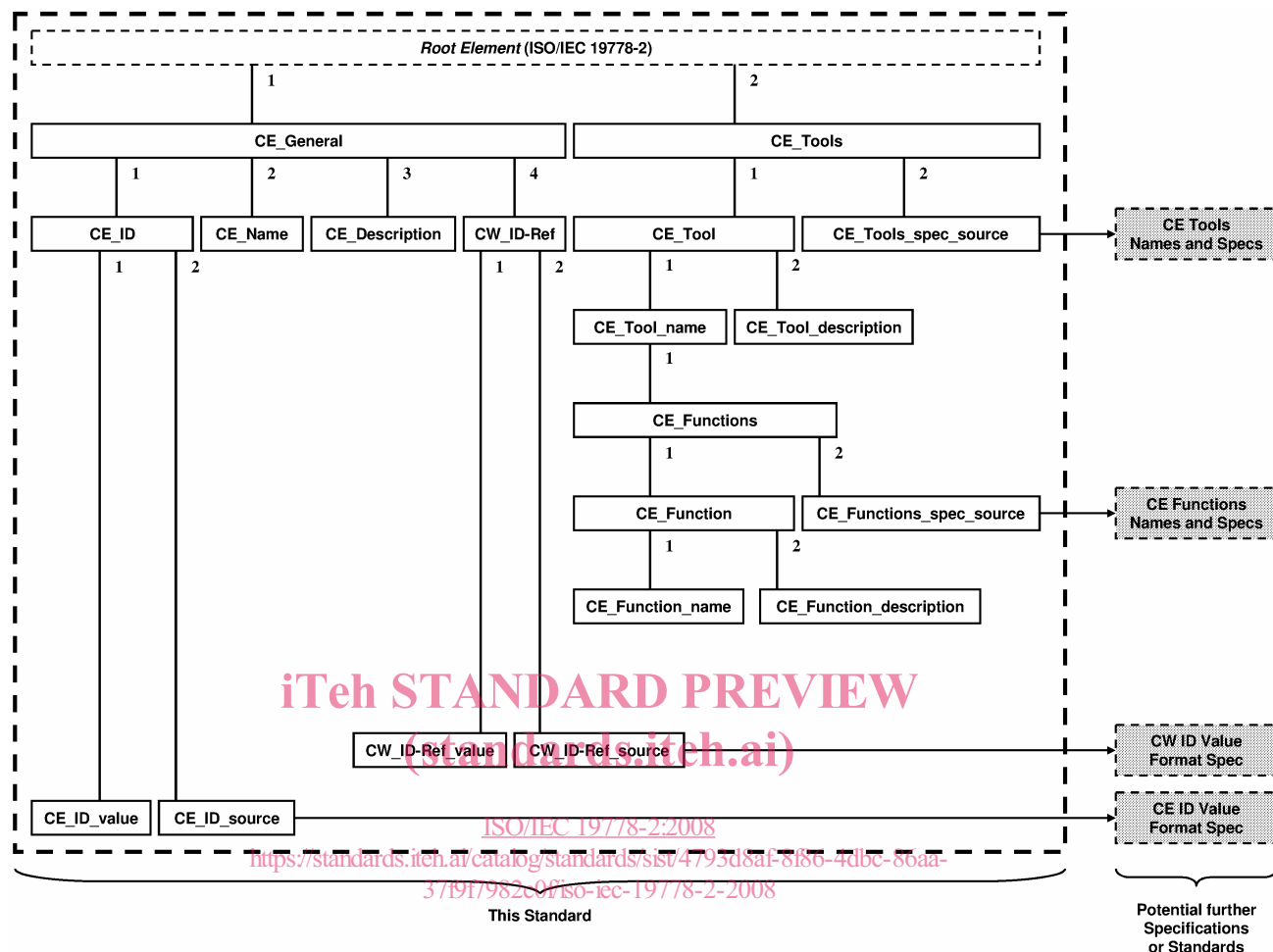


Figure 2 — Collaborative environment Data Model and external specifications or standards

Four potential further specifications or standards are denoted as grey boxes outside the large dashed box to the right. The arrows from the *DMEs* to these boxes represent references from this *Data Model* to such specifications or standards. Where such specifications or standards are referenced, they impose regulations on "value" or "name" *DMEs* as specified in the Datatype column of the *Data Model* table in 5.3.

5.3 Collaborative environment Data Model specification

The following specification of the *Data Model* uses the tabular representation specified in ISO/IEC 19778-1:2008, 5.1.

Table 1 — Collaborative Environment Data Model

Identifier	Designation	Definition	Obligation	Multiplicity	Datatype	Examples
1	CE_General	Information describing the collaborative environment as a whole	mandatory	1		
1.1	CE_Name	A title or name by which the collaborative environment is generally known	optional	1	ISO/IEC 11404:2007, 10.1.5 "Character string (ISO/IEC 10646:2003)" Supported Length = 100 characters	Computer Graphics Exercises
1.2	CE_Description	An account of the collaborative environment	optional	1	ISO/IEC 11404:2007, 10.1.5 "Character string (ISO/IEC 10646:2003)" Supported Length = 4000 characters	Environment for collaborative work on Computer Graphics exercises
1.3	CE_ID	An identifier for the collaborative environment	mandatory	1		
1.3.1	CE_ID_source	The name or URI of the identification scheme used to generate the value of the collaborative environment identifier. A namespace scheme.	optional	1	ISO/IEC 11404:2007, 10.1.5 "Character string (ISO/IEC 10646:2003)" Supported Length = 250 characters	http://www.gris.informatik.tu-darmstadt.de/idformats/identifier_type.pdf

Identifier	Designation	Definition	Obligation	Multiplicity	Datatype	Examples
1.3.2	CE_ID_value	Value of the <i>collaborative environment</i> identifier	mandatory	1	ISO/IEC 11404:2007, 10.1.5 "Character string (ISO/IEC 10646:2003)" Supported Length = 250 characters Permissible values shall comply with any specification or standard identified by the reference value in <i>DE</i> 1.3.1 (if provided).	de_tu-darmstadt_informatik_gris_20060707_13582578
1.4	CW_ID-Ref	<i>Collaborative workplace</i> identifier reference	optional	1		
1.4.1	CW_ID-Ref_source	The name or URI of the identification scheme used to generate the value of the <i>collaborative workplace</i> identifier reference. A namespace scheme.	optional	1	ISO/IEC 11404:2007, 10.1.5 "Character string (ISO/IEC 10646:2003)" Supported Length = 250 characters	http://www.gris.informatik.tu-darmstadt.de/icformats/identifier_type.pdf
1.4.2	CW_ID-Ref_value	Value of the <i>collaborative workplace</i> identifier reference; the corresponding <i>collaborative workplace</i> identifier is specified in <i>Data Element</i> "ISO/IEC 19778-1:2008, 1.3.2".	mandatory	1	ISO/IEC 11404:2007, 10.1.5 "Character string (ISO/IEC 10646:2003)" Supported Length = 250 characters Permissible values shall comply with any specification or standard identified by the reference value in <i>DE</i> 1.4.1 (if provided).	de_tu-darmstadt_informatik_gris_20060910_10141733
2	CE_Tools	Specification of the <i>collaborative tools</i> of the <i>collaborative environment</i>	mandatory	1		