
**Information technology — Learning,
education and training — Collaborative
technology — Collaborative learning
communication —**

Part 1:

Text-based communication

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*Technologies de l'information — Apprentissage, éducation et
formation — Technologie collaborative — Communication
d'apprentissage collaboratif —*

ISO/IEC 19780-1:2008
Partie 1: Communication à base de texte

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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.

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 19780-1 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 36, *Information technology for learning, education and training*.

ISO/IEC 19780 consists of the following parts, under the general title *Information technology — Learning, education and training — Collaborative technology — Collaborative learning communication*:

— *Part 1: Text-based communication*

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0 Introduction

0.1 Collaborative communication in general

Collaborative learning that is supported with information and communication technologies (ICTs) can involve the use of a range of media, including audio (e.g. IP telephony), video (e.g. video over IP), graphics (e.g. shared whiteboard) and text (e.g. chat, computer conferencing). Combinations of these media (e.g. audio telegraphics) can also be used in collaborative learning activities. ISO/IEC 19780 focuses on messages and events arising in the course of collaborative learning activities, using a range of *collaborative tools* and media types. ISO/IEC 19780 understands and defines these communicative actions and events as being sent and received by *participants* and within environments, as these are conceptualized and defined in ISO/IEC 19778.

This part of ISO/IEC 19780 focuses on *text*-based communications and messages. Future editions or parts of ISO/IEC 19780 may address communications using other media (e.g. audio or video), or communications independent of any particular medium. Experience and feedback deriving from this part of ISO/IEC 19780 and from work with evolving communication media are likely to play an important role in determining the shape and direction of this future standardization work.

In this context, “text” can be defined in terms provided by the Oxford English Dictionary: “the wording of anything expressed; the structure formed by the words in their order; the very words, phrases, and sentences as written.” *Text* is further understood here as that which can be expressed using a specified character set (here the “coded character sets” defined in ISO 10646:2003). The use of markup languages derived from the specified character set used is also admissible.

Some of the most common forms of ICT-supported collaborative learning involve the exchange of messages or *text*-based *expressions*. As defined here, *text*-based collaboration and communication is characterized by relatively brief messages or “small” *expression bodies* (e.g. a single word to a few paragraphs), and by relatively short time intervals between such *expressions* (seconds to days). The result is that content generated through this type of communication tends to be highly context-dependent, with any one *expression* often gaining its meaning from complex relationships to others. This makes the portability and potential reconstruction of these relationships and of this context of great significance.

Within the general parameters described above, the length of and time intervals between discrete communicative actions or messages can vary. Collaborative technologies and activities with the smallest intervals between messages are often labelled “synchronous”, and tend to be associated with the term “chat”. Those with longer intervals and more sizeable *expression bodies* are often labelled “asynchronous”, and tend to be associated with terms such as “discussion” or “conferencing”. In the terminology defined in ISO/IEC 19778, both synchronous (chat) and asynchronous (discussion) represent particular *collaborative services*, composed of *collaborative tools* (ICQ, Windows Messenger, etc.) which provide *collaborative functions* (e.g. instant messaging). These functions, in turn, contribute to particular *collaborative effects* (e.g. facilitating the gradual achievement of consensus).

NOTE Italicized terms in the paragraphs above and throughout this part of ISO/IEC 19780 are defined in Clause 3 or in ISO/IEC 19778-1:2008.

0.2 Text-based communication in particular

This part of ISO/IEC 19780 presents a *Data Model* for *text*-based *expressions*.

A *collaborative workplace* is defined as an instantiated independent entity, consisting of the *collaborative activities* of a *collaborative group* which works together by means of a *collaborative environment* (ISO/IEC 19778-1 to ISO/IEC 19778-3).

As these definitions indicate, *collaborative workplaces* are associated with two major kinds of components:

- *collaborative service* components, and
- *collaborative group* components.

This part of ISO/IEC 19780 provides a *Data Model* to accommodate the data constituted by and associated with *text-based* messages or *expressions*, which are exchanged among *collaborative group* members within a *collaborative environment*.

Expressions are composed by and exchanged among *collaborative group* members within a *collaborative workplace*. *Collaborative environment* components (*collaborative services*, *tools* and *functions*) facilitate these *collaborative activities*, resulting in various *collaborative effects*. Typical effects can include, for example, "reaching a compromise on a controversial issue", "exploring arguments for and against a particular decision item", or "getting to know students in a class". The classification and definition of particular *collaborative effects* is outside of the scope of this part of ISO/IEC 19780. *Expression Data Model instantiations* are associated by reference to *collaborative group Data Model* and *collaborative environment Data Model instantiations*.

This can be illustrated through the example of a mailing list considered as a *collaborative workplace*. Such a *collaborative workplace* is instantiated as an independent entity by associating a particular list of email addresses (each address being associated with a *participant*) with a particular email service (or with specific aspects of such a service). *Collaborative group* members (being identified in the system by their email addresses) interact with each other and with the email service by composing, sending, receiving, reading and responding to email messages or *expressions*. The email service accepts emails from *collaborative group* members only, and forwards or reflects them to all other *collaborative group* members as specified in the email address list of the *collaborative group*.

Naturally, such a collaborative context, as an abstract entity, does not encompass the holders of the email addresses nor the email server, the email clients or the computers of the *participants*.

Expressions are composed, sent and received by members of the *collaborative group*. These *collaborative activities* are made possible through the email service provided through the *collaborative environment*.

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Part 1: Text-based communication

1 Scope

1.1 Statement of scope

This part of ISO/IEC 19780 specifies the *Data Model* for *text-based expressions*.

It provides a standardized way of isolating and describing textual *expressions* composed and communicated by *collaborative group* members.

1.2 Excluded subjects and aspects

For the purposes of simplicity, the following media and contexts have been excluded from this part of ISO/IEC 19780.

- Communication involving media other than *text*.
- Contexts and associated requirements in which one or more *participants* are intended to receive a given *expression* are identified individually, apart from the *collaborative group* (e.g. “whispering” or “private messaging” in chat contexts).

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 19778:2008 (all parts), *Information technology — Learning, education and training — Collaborative technology — Collaborative workplace*

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

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

ISO 8601:2004, *Data elements and interchange formats – Information interchange — Representation of dates and times*

3 Terms and definitions

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

NOTE The terms defined here are closely interrelated. When a term is utilized elsewhere in this part of ISO/IEC 19780 as defined in this list or as defined in ISO/IEC 19778-1, that term is *italicized*.

3.1 expression

instantiation of the *Data Model* for *text-based expressions* including the *expression body* and possible *expression attachments*

NOTE See ISO/IEC 19778-2:2008.

3.2 expression attachment

additional data associated with a given *expression*

3.3 expression body

principle message or communicative substance of the *expression* shared among *participants* in a *collaborative environment*, related through reference to the *expression Data Model instance*

3.4 text

data in the form of characters, symbols, words, phrases, paragraphs, sentences, tables, or other character arrangements, intended to convey a meaning and whose interpretation is essentially based on the reader's knowledge of some natural language or artificial language

NOTE 1 The interpretation of text in collaborative communication is also based on the communicative context.

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NOTE 2 The use of tables and complex character arrangements might not always be possible in text-based collaborative communication.

4 Abbreviations and acronyms

NOTE Some of these abbreviations or acronyms represent terms defined in Clause 3.

CE	Collaborative Environment
CG	Collaborative Group
CT	Collaborative Technology
CW	Collaborative Workplace
EX	expression
ID	identifier
ITLET	Information Technology for Learning, Education and Training
Ref	Reference
URI	Uniform Resource Identifier
URL	Uniform Resource Locator (world wide web address)

5 Text-based communication data model

5.1 Overview

The *expression* entity and *Data Model* is related through reference (using ID-Refs) to the other entities constituting the *collaborative workplace* as indicated in Figure 1. Each *expression* is related in this way both to the tool with which it is sent, read and received (the *collaborative tool* and its *collaborative function*), and also to the group member who generated it (as both *participant* and *role holder*).

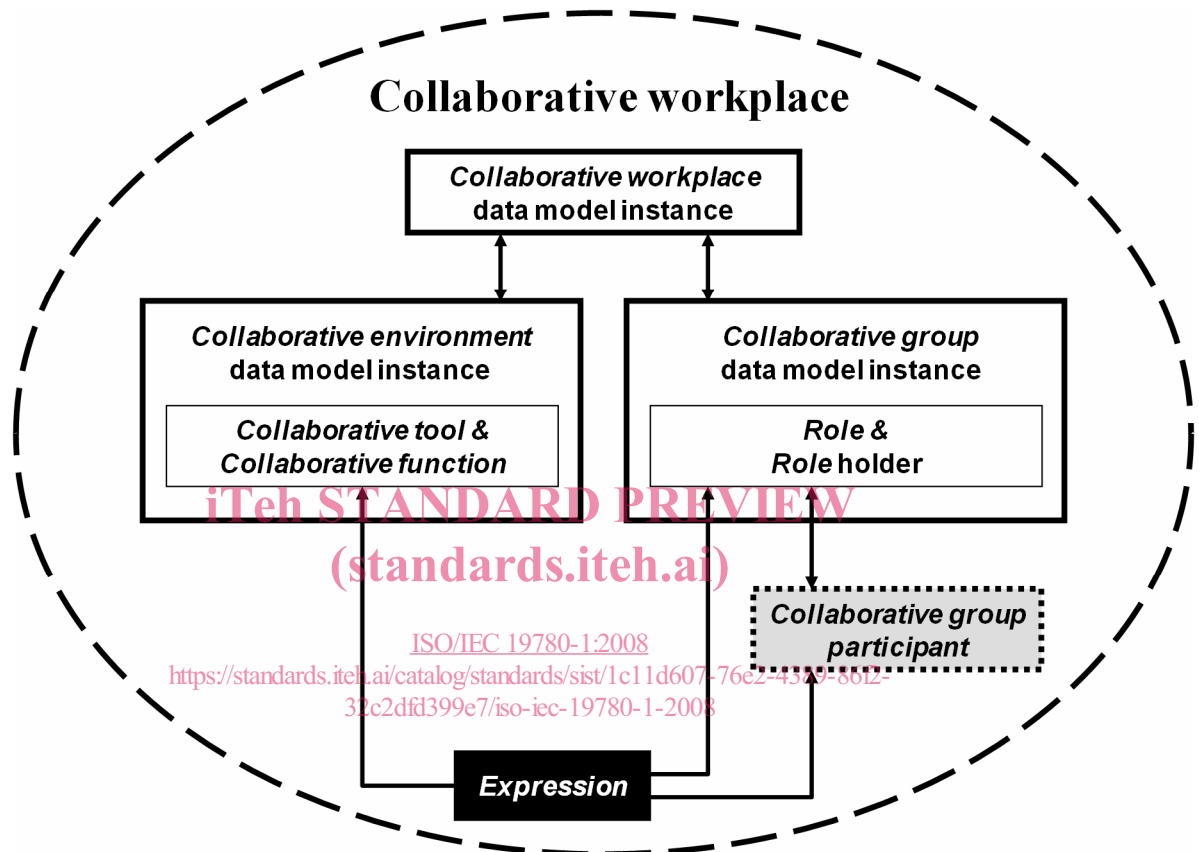


Figure 1 — *Collaborative environment, collaborative group, and expression* entities located and interrelated within a *collaborative workplace*

The general approach for formulating identifiers in this part of ISO/IEC 19780 is the same as that put forward in ISO/IEC 19778:2008. In order to support more than a single identifier format, both standards utilize a "source" - "value" approach for identifier *Data Elements*, in which the value of sub-element "source" specifies a URI (Uniform Resource Identifier, e.g. the URL where the specification for the identifier format is found), and the sub-element "value" carries the identifier value itself, which is compliant to the earlier format description. It is the responsibility of the users of this part of ISO/IEC 19780 to assure that their identifiers are unique at least within a particular domain or application context.

5.2 Expression data model specification

The table-based *Expression Data Model* representation used here corresponds to the specification provided in ISO/IEC 19778-1:2008, 5.1.

Table 1 — Expression data model

Identifier	Designation	Definition	Obligation	Multiplicity	Datatype	Examples
1	EX_ID	The identifier of this expression <i>Model instantiation</i> . Identifies this <i>Data Model</i> instantiation uniquely in the context of the <i>collaborative workplace</i> , in which the associated <i>expression</i> has been communicated.	mandatory	1	ISO/IEC 11404:2007, 10.1.5 "Character string (ISO/IEC 10646:2003)" Supported Length = 250 characters	0241
2	EX_Title	Name or subject given to this <i>expression</i> . The title of this <i>expression</i> can be inherited from a previous <i>expression</i> to which it is related.	optional	1	ISO/IEC 11404:2007, 10.1.5 "Character string (ISO/IEC 10646:2003)" Supported Length = 100 characters	Re: Welcome to the course
3	EX_B-Ref	Reference to the <i>body</i> of this <i>expression</i> .	mandatory	1		
3.1	EX_B-Ref_source	The name or URI of the identification scheme used to generate the value for the <i>expression body</i> reference. A namespace scheme.	optional	1	ISO/IEC 11404:2007, 10.1.5 "Character string (ISO/IEC 10646:2003)" Supported Length = 250 characters	http://refreg.org/id=192837
3.2	EX_B-Ref_value	Value of the <i>expression body</i> reference. In exceptional cases, the <i>expression body</i> may not contain any text; however, a reference to this "null" or "empty" <i>body</i> is still required. The manner in which this empty <i>body</i> is constituted is considered out of scope for this Standard.	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 3.1, EX_B-Ref_source (if provided).	8693073_ss22

Table 1 (continued)

Identifier	Designation	Definition	Obligation	Multiplicity	Datatype	Examples
4	EX_A-Ref	Reference(s) to file(s) (other than the body) which are made accessible with this expression.	optional	1..20		
4.1	EX_A-Ref_source	The name or URI of the identification scheme used to generate the value for the expression attachment reference. A namespace scheme.	optional	1	ISO/IEC 11404:2007, 10.1.5 "Character string (ISO/IEC 10646:2003)" Supported Length = 250 characters	http://refreg.org/ id=192837
4.2	EX_A-Ref_value	Value of the expression attachment reference.	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 4.1, EX_A-Ref_source (if provided).	xyz_768594
5	EX_Time_Date	The point in time when this expression was sent	mandatory	1	ISO 8601:2004, 4.3 "Date and time of day"	2005-03- 11T23:05:33.04 3+02:00
6	CG_Role_name	Name of the role played by the member of the collaborative group while generating and exchanging this expression. Corresponds to the Data Element ISO/IEC 19778-3:2008, 2.2.1 that is provided for this role	mandatory	1	ISO/IEC 11404:2007, 10.1.5 "Character string (ISO/IEC 10646:2003)" Supported Length = 100 characters	Moderator