

---

---

**Information technology — SGML  
Applications — Topic Maps**

*Technologies de l'information — Applications SGML — Plans relatifs à des  
sujets*

**iTeh STANDARD PREVIEW  
(standards.iteh.ai)**

[ISO/IEC 13250:2000](https://standards.iteh.ai/catalog/standards/sist/992b3b4e-60c8-4d5f811b-4f5625bb1f3d/iso-iec-13250-2000)

[https://standards.iteh.ai/catalog/standards/sist/992b3b4e-60c8-4d5f811b-  
4f5625bb1f3d/iso-iec-13250-2000](https://standards.iteh.ai/catalog/standards/sist/992b3b4e-60c8-4d5f811b-4f5625bb1f3d/iso-iec-13250-2000)

**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 13250:2000](#)

<https://standards.iteh.ai/catalog/standards/sist/992b3b4e-60c8-4d5f-811b-4f5625bb1f3d/iso-iec-13250-2000>

© ISO/IEC 2000

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 22 734 10 79  
E-mail [copyright@iso.ch](mailto:copyright@iso.ch)  
Web [www.iso.ch](http://www.iso.ch)

Printed in Switzerland

# Contents

<b>1. Scope</b> .....	<b>1</b>
<b>2. Normative references</b> .....	<b>1</b>
<b>3. Definitions</b> .....	<b>2</b>
3.1 added themes .....	2
3.2 association .....	2
3.3 association link .....	2
3.4 association role .....	2
3.5 association type .....	2
3.6 base name .....	2
3.7 bounded object set (BOS) .....	3
3.8 display name .....	3
3.9 facet .....	3
3.10 facet link .....	3
3.11 facet type .....	3
3.12 facet value .....	3
3.13 hub document .....	3
3.14 occurrence role .....	3
3.15 public subject descriptor .....	3
3.16 scope .....	3
3.17 sort name .....	4
3.18 subject .....	4

ITech STANDARD PREVIEW  
(standards.iteh.ai)

[ISO/IEC 13250:2000](https://standards.iteh.ai/catalog/standards/sist/992b3b4e-60c8-4d5f-811b-4f5625bb1f3d/iso-iec-13250-2000)

[https://standards.iteh.ai/catalog/standards/sist/992b3b4e-60c8-4d5f-811b-](https://standards.iteh.ai/catalog/standards/sist/992b3b4e-60c8-4d5f-811b-4f5625bb1f3d/iso-iec-13250-2000)

[4f5625bb1f3d/iso-iec-13250-2000](https://standards.iteh.ai/catalog/standards/sist/992b3b4e-60c8-4d5f-811b-4f5625bb1f3d/iso-iec-13250-2000)

3.19 subject descriptor ..... 4

3.20 theme ..... 4

3.21 topic ..... 5

3.22 topic association ..... 5

3.23 topic characteristic ..... 5

3.24 topic characteristic assignment ..... 5

3.25 topic link ..... 5

3.26 topic map ..... 5

3.27 topic name ..... 6

3.28 topic occurrence ..... 6

3.29 topic type ..... 6

3.30 unconstrained scope ..... 6

**4. Notation** ..... <https://standards.iteh.ai/catalog/standards/sist/992b3b4e-60c8-4d5f-811b-41562566115d/iso-iec-13250-2000> **6**

4.1 RCS name, full name, description, and clause ..... 7

4.2 Constraints ..... 7

4.3 Note ..... 8

**5. Topic Maps architecture** ..... **8**

5.1 Topic Map Architectural Form ..... 8

5.2 Topic link ..... 10

5.2.1 Topic Link Architectural Form ..... 10

5.2.2 Topic Name Architectural Form ..... 12

5.2.3 Topic Occurrence Architectural Form ..... 15

5.3 Association Link ..... 18

5.3.1 Association Link Architectural Form ..... 18

5.3.2 Association Role Architectural Form ..... 19

iteh STANDARD PREVIEW  
(standards.iteh.ai)

[ISO/IEC 13250:2000](https://standards.iteh.ai/catalog/standards/sist/992b3b4e-60c8-4d5f-811b-41562566115d/iso-iec-13250-2000)

<https://standards.iteh.ai/catalog/standards/sist/992b3b4e-60c8-4d5f-811b-41562566115d/iso-iec-13250-2000>

5.4 Themes To Be Added Architectural Form .....	21
5.5 Facet Linking .....	22
5.5.1 Facet Link Architectural Form .....	23
5.5.2 Facet Value Architectural Form .....	24
<b>6. Conformance .....</b>	<b>25</b>
<b>Annexes .....</b>	<b>27</b>
<b>A. Annex A: Topic Maps Meta-DTD (Normative) .....</b>	<b>27</b>
<b>B. Annex B: Example Architectural Support Declaration for the Topic Maps Architecture (Informative) .....</b>	<b>39</b>

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[ISO/IEC 13250:2000](https://standards.iteh.ai/catalog/standards/sist/992b3b4e-60c8-4d5f-811b-4f5625bb1f3d/iso-iec-13250-2000)  
<https://standards.iteh.ai/catalog/standards/sist/992b3b4e-60c8-4d5f-811b-4f5625bb1f3d/iso-iec-13250-2000>

## 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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1. 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 International Standard may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

International Standard ISO/IEC 13250 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 34, *Document description and processing languages*.

Annex A forms a normative part of this International Standard. Annex B is for information only.

## Introduction

This International Standard provides a standardized notation for interchangeably representing information about the structure of information resources used to define topics, and the relationships between topics. A set of one or more interrelated documents that employs the notation defined by this International Standard is called a *topic map*. In general, the structural information conveyed by topic maps includes:

- groupings of addressable information objects around topics ('occurrences'), and
- relationships between topics ('associations').

A topic map defines a multidimensional topic space — a space in which the locations are topics, and in which the distances between topics are measurable in terms of the number of intervening topics which must be visited in order to get from one topic to another, and the kinds of relationships that define the path from one topic to another, if any, through the intervening topics, if any.

NOTE 1 Two topics may be connected through an association, and they can also be connected by virtue of sharing an occurrence.

In addition, information objects can have properties, as well as values for those properties, assigned to them externally. These properties are called *facet types*.

NOTE 2 The word *facet* can mean one side of a many-sided, polished object, or one segment of a compound eye (e.g. an insect's). Its metaphorical use here captures the idea that a facet is a property of a set of information objects that can be used to create a view of them.

Several topic maps can provide topical structure information about the same information resources. The Topic Maps architecture is designed to facilitate merging topic maps without requiring the merged topic maps to be copied or modified. Because of their extrinsic character, topic maps can be thought of as *overlays* on, or extensions to, sets of information objects.

The base notation of Topic Maps is SGML; an interchangeable topic map always consists of at least one SGML document, and it may include and/or refer to other kinds information resources. A set of information resources that comprise a complete interchangeable topic map can be specified using the 'bounded object set (BOS)' facility defined by the HyTime architecture in ISO/IEC 10744:1997.

As the Extensible Markup Language (XML), a World Wide Web Consortium recommendation, is a subset of SGML, as explained in Annex K of SGML (1997), also known as WebSGML, XML can be also used as a base notation for Topic Maps.

The topic map notation is defined as an *SGML Architecture*, and this International Standard takes the form of an *architecture definition document* expressed in conformance with Normative Annex A.3 of ISO/IEC 10744:1997, the *SGML Architectural Form Definition Requirements (AFDR)*. The formal definition of the topic map notation is expressed as a meta-DTD.

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

ISO/IEC 13250:2000

<https://standards.iteh.ai/catalog/standards/sist/992b3b4e-60c8-4d5f-811b-4f5625bb1f3d/iso-iec-13250-2000>



# Information technology — SGML Applications — Topic Maps

## 1 Scope

NOTE 1 This clause defines the scope of this International standard. It should not be confused with the concept of "scope" defined in 3.16, which only applies in the context of Topic Maps.

Topic maps enable multiple, concurrent views of sets of information objects. The structural nature of these views is unconstrained; they may reflect an object oriented approach, or they may be relational, hierarchical, ordered, unordered, or any combination of the foregoing. Moreover, an unlimited number of topic maps may be overlaid on a given set of information resources.

Topic maps can be used:

- To qualify the content and/or data contained in information objects as topics to enable navigational tools such as indexes, cross-references, citation systems, or glossaries.
- To link topics together in such a way as to enable navigation between them. This capability can be used for virtual document assembly, and for creating thesaurus-like interfaces to corpora, knowledge bases, etc.
- To filter an information set to create views adapted to specific users or purposes. For example, such filtering can aid in the management of multilingual documents, management of access modes depending on security criteria, delivery of partial views depending on user profiles and/or knowledge domains, etc.
- To structure unstructured information objects, or to facilitate the creation of topic-oriented user interfaces that provide the effect of merging unstructured information bases with structured ones. The overlay mechanism of topic maps can be considered as a kind of *external markup mechanism*, in the sense that an arbitrary structure is imposed on the information without altering its original form.

This International Standard does not require or disallow the use of any scheme for addressing information objects. Except for the requirement that topic map documents themselves be expressed using SGML (or WebSGML) and HyTime, using the syntax described herein, neither does it require or disallow the use of any notation used to express information.

## 2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 8879:1986, *Information processing — Text and office systems — Standard Generalized Markup Language (SGML)*, including Technical Corrigenda 1, 2, and 3.

ISO 10744:1997, *Information processing — Text and office systems — Hypermedia/Time-based Structuring Language (HyTime)*, including Amendment 1.

### 3 Definitions

For the purposes of this International Standard; the following definitions apply.

The definitions provided in ISO 8879:1986 (including TC1, TC2 and TC3) and ISO/IEC 10744:1997 (including Amendment 1) shall apply to this International Standard.

#### 3.1 added themes

Topics added to the sets of themes comprising the scopes within which topics have their topic characteristics. Added themes can be specified in two ways:

- a) Within the topic map document whose scopes are affected, by means of the **added themes** (*addthemes*) attribute of the document element. The specified themes are added to the scopes of all of the topic characteristics which are assigned to topics via the topic links and association links contained in the document.
- b) Inside or outside the topic map document whose scopes are affected, by means of elements conforming to the **themes to be added** (*addthms*) architectural form. The specified themes are added to the topic characteristics assigned to topics via:
  - entire topic map documents (specified via the *tmdocs* attribute),
  - topic links (that is, the name characteristics and occurrence characteristics assigned to topics via topic links) (specified via the *cassign* attribute),
  - association links (that is, the roles played in associations by topics, as assigned to topics via association links) (specified via the *cassign* attribute), or
  - any combination of the foregoing.

#### 3.2 association

See 'topic association'.

#### 3.3 association link

A hyperlink element conforming to the association link architectural form defined by this International Standard. See 5.3.

#### 3.4 association role

One of the roles that topics play in a given topic association.

#### 3.5 association type

- a) A subject which is a class of topic associations.
- b) One of the classes of topic associations of which a particular association link is an instance. The association types of which a given association link is an instance can be specified by its optional *types* attribute.

#### 3.6 base name

- a) A subelement (*basename*) of a *topname* subelement of a topic link.

b) A name characteristic of a topic that is specified in the content of a *basename* element.

### 3.7 bounded object set (BOS)

A set of one or more documents and other information objects, all of which are known to the processing application and which are processed collectively. See ISO/IEC 10744:1997 for details; see also the definition of ‘hub document’.

### 3.8 display name

a) A subelement (*dispname*) of a *topname* subelement of a topic link, containing the identifying information intended to be displayed by the application to represent the subject of the topic link.

b) A name characteristic of a topic that is specified in the content of a *dispname* element.

### 3.9 facet

a) The subset of information objects that share an externally-applied property.

b) The values given to a particular property externally applied to a set of information objects.

### 3.10 facet link

A hyperlink that applies values for a given property (as well as the property itself) to one or more information objects.

### 3.11 facet type

A property applied by one or more facet links to one or more objects.

### 3.12 facet value

A member of the set of all values of a particular facet type.

### 3.13 hub document

The HyTime document used to define the set of information resources (the *bounded object set* (BOS)) that comprise a HyTime hyperdocument. Applications may regard the HyTime document used as the entry point for a browsing session within a hyperdocument as the hub document. See ISO/IEC 10744:1997 for details. By definition, a topic map is a HyTime hyperdocument, and any topic map document can be regarded as a hub document.

### 3.14 occurrence role

The sense in which some set of occurrences is relevant to a topic. In the Topic Maps architecture, occurrence roles are specified as anchor roles (as defined in the HyTime architecture) of topic links.

### 3.15 public subject descriptor

A subject descriptor (see the definition of ‘subject descriptor’) which is used (or, especially, which is designed to be used) as a common referent of the *identity* attributes of many topic links in many topic maps. The subject described by the subject descriptor is thus easily recognized as the common binding point of all the topic links that reference it, so that they will be merged.

### 3.16 scope

NOTE 2 The definition of scope provided here should not be confused with 1, entitled ‘Scope’, which defines the scope of this International Standard.

The extent of the validity of a topic characteristic assignment (see the definition of ‘topic characteristic assignment’): the context in which a name or an occurrence is assigned to a given topic, and the context in which topics are related through associations. This International Standard does not require that scopes be specified explicitly. If the scope of a topic characteristic assignment is not explicitly specified via one or more *scope* attributes, the scope within which the topic characteristic applies to the topic includes all the topics in the entire topic map; this special scope is called ‘the unconstrained scope’. If a scope is specified, the specification consists of a set of topics, which, in the context of their role as members of such a set, are called ‘themes’. Each theme contributes to the extent of the scope that the themes collectively define; a given scope is the union of the subjects of the set of themes used to specify that scope.

NOTE 3 If it is desired to specify a scope which is the intersection (rather than the union) of two topics, this can be accomplished by creating a topic whose subject is that intersection, and then by using that topic as a theme.

### 3.17 sort name

- a) A subelement (*sortname*) of a *topname* subelement of a topic link, containing a string that is an alternative representation of a topic name that is intended to be used for alphabetic or other ordering.
- b) A name characteristic of a topic that is specified in the content of a *sortname* element.

### 3.18 subject

In the most generic sense, a ‘subject’ is any thing whatsoever, regardless of whether it exists or has any other specific characteristics, about which anything whatsoever may be asserted by any means whatsoever.

<https://standards.iteh.ai/catalog/standards/sist/992b3b4e-60c8-4d5f-811b-45625b11211e/iso-iec-13250-2000>

NOTE 4 The invisible heart of every topic link is the subject that its author had in mind when it was created. In some sense, a topic link reifies a subject. The *identity* attribute of a topic link is provided to allow the author of the topic link to indicate, as unambiguously as possible, the subject he had in mind as the organizing principle of the topic. See the definition of ‘subject descriptor’.

### 3.19 subject descriptor

Information which is intended to provide a positive, unambiguous indication of the identity of a subject, and which is the referent of an *identity* attribute of a topic link. (See also the definition of ‘public subject descriptor’.)

NOTE 5 There is no requirement that a subject descriptor be text, although it can be the text of a definition of the subject. It can also, for example, be a listing in a catalog of subjects, such as an acquisition number of an asset in a museum collection, a catalog number in a sales catalog, or a subject heading in a catalog of library subject headings. The distinction between a subject descriptor that happens to be a definition and an ordinary occurrence of a definition is that, in the case of the subject descriptor, the topic link’s author has indicated (by referring to it by means of the value of the *identity* attribute) that it is to be regarded as the authoritative definition of the organizing principle of the topic link. In the other case, by characterizing a definition as a definitional occurrence, the author is merely acknowledging the existence of the definition and its possible relevance to the subject of the topic link.

NOTE 6 Subject descriptors may be offline resources.

### 3.20 theme

A member of the set of topics comprising a scope within which a topic characteristic assignment is valid. See also the definitions of ‘scope’ and ‘topic’.

### 3.21 topic

- a) An aggregate of topic characteristics, including zero or more names, occurrences, and roles played in associations with other topics, whose organizing principle is a single subject.
- b) A topic link element. See 5.2.

### 3.22 topic association

- a) A specific relationship among specific topics that is asserted by an association link element.
- b) An association link element. See 5.3.

### 3.23 topic characteristic

Any defining characteristic of a topic. There are three kinds of topic characteristics:

- a) names,
- b) occurrences, and
- c) roles played in relationships ('associations') with other topics.

For example, a name of a topic is a 'name characteristic' of that topic.

### 3.24 topic characteristic assignment

- a) The mechanism whereby a topic characteristic becomes a characteristic of a topic. For example, *topname* subelements of topic link elements are used to assign names to topics as topic characteristics, so, in topic map documents, they perform the function of assigning topic name characteristics.
- b) The fact that a particular topic characteristic is a characteristic of a particular topic.

### 3.25 topic link

A hyperlink element conforming to the topic link architectural form defined in 5.2 by this International Standard.

NOTE 7 In this International Standard, the foregoing definition is invoked by the phrase 'topic link', or, since the default SGML name of the topic link architectural form is 'topic', by the special typography used to distinguish SGML names (i.e., *topic*).

NOTE 8 See also the definition of 'topic'.

### 3.26 topic map

- a) A set of information resources regarded by a topic map application as a bounded object set whose hub document is a topic map document conforming to the SGML architecture defined by this International Standard.
- b) Any topic map document conforming to the SGML architecture defined by this International Standard, or the document element (*topicmap*) of such a document.