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Information technology — SGML applications — Topic maps

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

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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.

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

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

This second edition cancels and replaces the first edition (ISO/IEC 13250:2000), which has been technically revised.

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.

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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 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 8879:1986, *Information processing — Text and office systems — Standard Generalized Markup Language (SGML)*

ISO/IEC 10744:1997, *Information technology — Hypermedia/Time-based Structuring Language (HyTime)*