

INTERNATIONAL
STANDARD

ISO/IEC
13250-2

First edition
2006-08-15

**Information technology — Topic Maps —
Part 2:
Data model**

*Technologies de l'information — Plans relatifs à des sujets —
Partie 2: Modèle de données*

Reference number
ISO/IEC 13250-2:2006(E)



© ISO/IEC 2006

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.

© ISO/IEC 2006

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
2 Normative references	1
3 Terms and definitions	1
4 The metamodel	4
4.1 Introduction	4
4.2 Locators	5
4.3 The fundamental types	5
4.4 Datatypes	6
5 The data model	6
5.1 General	6
5.2 The topic map item	7
5.3 Topic items	8
5.3.1 Subjects and topics	8
5.3.2 Identifying subjects	8
5.3.3 Scope	9
5.3.4 Reification	9
5.3.5 Properties	10
5.4 Topic name items	10
5.5 Variant items	12
5.6 Occurrence items	12
5.7 Association items	13
5.8 Association role items	14
6 Merging	15
6.1 General	15
6.2 Merging topic items	15
6.3 Merging topic name items	15
6.4 Merging variant items	15
6.5 Merging occurrence items	16
6.6 Merging association items	16
6.7 Merging association role items	16
7 Core subject identifiers	17
7.1 General	17
7.2 The type-instance relationship	17
7.3 The supertype-subtype relationship	17
7.4 Sort names	18
7.5 The default name type	18
Annex A (informative) Subject identifiers for defined terms	19
Bibliography	21

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 13250-2 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 34, *Document description and processing languages*.

This first edition of ISO/IEC 13250-2 is part of a multi-part standard. The complete series will cancel and replace ISO/IEC 13250:2003.

ISO/IEC 13250 consists of the following parts, under the general title *Information technology — Topic Maps*:

- *Part 2: Data model*
- *Part 3: XML syntax*
- *Part 4: Canonicalization*

Introduction

Topic Maps is a technology for encoding knowledge and connecting this encoded knowledge to relevant information resources. Topic maps are organized around topics, which represent subjects of discourse; associations, representing relationships between the subjects; and occurrences, which connect the subjects to pertinent information resources.

Topic maps may be represented in many ways: using Topic Maps syntaxes in files, inside databases, as internal data structures in running programs, and even mentally in the minds of humans. All these forms are different ways of representing the same abstract structure. It is that structure which this part of ISO/IEC 13250 defines, in the form of a data model.

NOTE The phrase "topic maps" is used in two ways in this part of ISO/IEC 13250: as a (capitalized) proper noun, "Topic Maps", denoting the name of ISO/IEC 13250; and as the plural of a common noun "topic map". Both terms are defined in Clause 3.

Information technology — Topic Maps —

Part 2: Data model

1 Scope

This part of ISO/IEC 13250 specifies a data model of Topic Maps. It defines the abstract structure of Topic Maps, using the information set formalism, and to some extent their interpretation, using prose. The rules for merging in Topic Maps are also defined, as are some fundamental subject identifiers.

The purpose of the data model is to define the interpretation of the Topic Maps interchange syntaxes, and to serve as a foundation for the definition of supporting standards for canonicalization, querying, constraints, and so on. All of these standards fall outside the scope of this part of ISO/IEC 13250.

NOTE 1 This clause defines the scope of this part of ISO/IEC 13250. It should not be confused with the concept of "scope" defined in 5.3.3, which only applies in the context of Topic Maps.

NOTE 2 This part of ISO/IEC 13250 does not have a conformance section since it is only a data model, and as such it has no boundary with the outside world in terms of which conformance can be specified.

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.

NOTE Each of the following documents has a unique identifier that is used to cite the document in the text. The unique identifier consists of the part of the reference up to the first comma, and referenced thus: [Identifier].

Unicode, *The Unicode Standard, Version 4.0*, The Unicode Consortium, Reading, Massachusetts, USA, Addison-Wesley, 2003, ISBN 0-321-18578-1

RFC 3986, *Uniform Resource Identifiers (URI): Generic Syntax*, Internet Standards Track Specification, January 2005, available at <<http://www.ietf.org/rfc/rfc3986.txt>>

RFC 3987, *Internationalized Resource Identifiers (IRIs)*, Internet Standards Track Specification, January 2005, available at <<http://www.ietf.org/rfc/rfc3987.txt>>

XML Infoset, *XML Information Set (Second Edition)*, World Wide Web Consortium, 4 February 2004, available at <<http://www.w3.org/TR/2004/REC-xml-infoset-20040204>>

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

XML, *Extensible Markup Language (XML) 1.0 (Third Edition)*, W3C Recommendation, 4 February 2004, available at <<http://www.w3.org/TR/2004/REC-xml-20040204>>

XML Schema-2, *XML Schema Part 2: Datatypes Second Edition*, W3C Recommendation, 28 October 2004, available at <<http://www.w3.org/TR/2004/REC-xmleschema-2-20041028>>