INTERNATIONAL STANDARD

ISO 12200

First edition
1999-10-01

Computer applications in terminology — Machine-readable terminology interchange format (MARTIF) — Negotiated interchange

Applications informatiques en terminologie — Format de transfert de données terminologiques exploitables par la machine (MARTIF) — Transfert négocié

Reference number
ISO 12200:1999(E)

Contents

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Printed in Switzerland

Figures, tables and examples cited in this standard

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 12200 was prepared by Technical Committee ISO/TC 37, *Terminology (principles and coordination)*, Subcommittee SC 3, *Computer applications.*

The specifications in this International Standard were developed in close cooperation with the Text Encoding Initiative (TEI) and the Localisation Industry Standards Association (LISA).

ISO 12200 is based on ISO 8879, Standard Generalized Markup Language (SGML). This International Standard covering negotiated interchange is designed to be as open and flexible as possible in order to cover all types and forms of terminological entry structures that occur in terminological databases and specialized dictionaries.

Further parts of ISO 12200 may specify more restricted interchange formats for specific purposes. The objective of these further parts would be to enable more data to be passed between systems without customized intervention. Such further parts of ISO 12200 would specify formats that will be backward compatible with this International Standard so that documents structured according to further parts of ISO 12200 would be parsable using the Document Type Definition (DTD) specified in this International Standard, but documents structured according to this International Standard would not necessarily be parsable with the DTD specified in one of the further parts of ISO 12200.

Annex A forms an integral part of this International Standard. Annexes B, C, D, E, F and G are for information only.

Introduction

Terminological data are collected, managed, and stored in a wide variety of terminology database systems, ranging from personal computer applications for individual users to mainframe term-bank systems operated by major companies and governmental agencies. The interchange of terminological data has become increasingly necessary among different applications, systems, and hardware platforms. This International Standard is designed to support these needs for efficient data interchange.

ISO 8879, which covers Standard Generalized Markup Language (SGML), provides a method of describing documents. Instead of encoding how a document is rendered on the page, it describes the structural properties of the document and the interrelation of the components making up the document. It is well-known that SGML provides a single universal descriptive language in which the many available markup systems can be represented to facilitate transfer of texts (i.e., of information) from one program or application to another. As the use of SGML grows, it is being more widely used, in accordance with the intentions of its designers, for marking up text for data interchange and information retrieval, as well as for encoding texts for manipulation in hypertext environments.

For terminology work in general, the following International Standards are relevant: ISO 704, ISO 860, ISO 1087 and ISO 10241.

Computer applications in terminology — Machine-readable terminology interchange format (MARTIF) — Negotiated interchange

1 Scope

This International Standard is based on ISO 8879. It deals with negotiated interchange and is designed to be as open and flexible as possible in order to cover all types and forms of terminological entry structures that occur in terminological databases and specialized dictionaries, as well as among various applications, operating systems, and hardware platforms. ISO 12200 is primarily designed for use with terminological data that can be stored, read, retrieved and manipulated by a computer. It is not limited to any specific software or hardware configurations.

The primary purpose of this International Standard is to provide guidance for programmers and analysts in designing export and import software for data interchange between terminology databases. The Document Type Definition (DTD) specified in this International Standard permits partial validation of interchange files using a general-purpose SGML parser (i.e., confirmation that the document conforms to the structure specified by the DTD).

NOTE – Before an initial interchange between new partners, some level of data examination, negotiation, and adjustment of conversion routines can be necessary.

This International Standard can also be used for the creation of conversion routines to accommodate data encoded according to ISO 6156. It is recommended that this International Standard be used in conjunction with ISO 12620.

This International Standard does not specify the structure and function of individual databases.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 639:1988, *Code for the representation of names of languages.*

ISO 639-2:1998, *Code for the representation of names of languages — Part 2: Alpha-3 code.*

ISO/IEC 646:1991, *Information technology — ISO 7-bit coded character set for information interchange.*

ISO 1087-2:—[1], *Terminology work — Vocabulary — Part 2: Computer applications.*

1) To be published.

ISO 3166-1:1997, *Code for the representation of names of countries and their subdivisions — Part 1: Country codes.*

ISO 8601:1988, *Data elements and interchange formats — Information interchange — Representation of dates and times.*

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

ISO/IEC 10646-1:1993, *Information technology — Universal Multiple-Octet Coded Character Set (UCS) — Part 1: Architecture and Basic Multilingual Plane.*

ISO 12083:1994, *Information and documentation — Electronic manuscript preparation and markup.*

ISO 12620:1999, *Terminology — Computer applications — Data categories.*

3 Terms and definitions

For the purpose of this International Standard, the definitions given in ISO 8879 and ISO 1087-2 apply. For the convenience of users of this International Standard, some relevant definitions from ISO 8879 and ISO 1087-2 are contained in Annex F. The following definition was adapted to avoid ambiguity in the context of this International Standard.

3.1
attribute
<in MARTIF> characteristic quality of a **generic identifier**
NOTE — Adapted from ISO 8879:1986.

4 Structuring terminological information

The basic unit of terminological data management used in MARTIF documents shall be the terminological entry. In other words, a MARTIF document shall be made up of terminological entries. A terminological entry shall contain information pertaining to a specific concept or several closely related concepts, one or more terms in one or more languages, and other descriptive and administrative information deemed useful in a particular context.

NOTE — Terminological data can take the form of terminology databases or can be used to print hardcopy documents, technical and terminological dictionaries, vocabularies and - to a certain extent - documentation thesauri. For SGML applications, however, even terminology databases themselves can be viewed as documents. The structure and presentation of data vary considerably among terminology databases as a result of different user needs, approaches, and software requirements. These variations also reflect whether the entry is monolingual, bilingual, or multilingual, whether it contains prescriptive or descriptive information, and the work environment in which the terminology file is created and used.

In order to account for differences in database design, individual terminological entry structures shall be mapped to the MARTIF structure for interchange purposes. It shall be noted, however, that if the structure of the source database is richer than that of the target database, a potential loss of information can only be avoided by appropriately re-structuring and re-tagging the target database.

Figure 1 represents a typical terminological entry such as might be generated in a multilingual working environment.

DATA CATEGORY	DATA CATEGORY CONTENT
Subject field	appearance of materials
English term	opacity
Grammatical information, part of speech, English term	noun
English definition	degree of obstruction to the transmission of visible light
English source identifier	ASTM Standard E284
English responsibility	ASTM Technical Committee E12
German term	Opazität
Grammatical information, part of speech, German term	noun
Grammatical information, gender, German term	feminine
Definition, German	Maß für die Lichtundurchlässigkeit
German source identifier	DIN 6730:1996-05
German responsibility	Normenausschuß Papier und Pappe (NPa) im DIN
French term	opacité
Grammatical information, part of speech, French term	noun
Grammatical information, gender, French term	feminine
French definition	rapport du flux lumineux incident au flux lumineux transmis ou réfléchi par un noircissement photographique
French source identifier	HJdi1986-539
French responsibility	C.I.R.A.D.

Figure 1 – Sample terminological entry displayed by listing data categories and corresponding data category content

NOTE – This sample terminological entry represents a realistic working environment where information on a single concept has been taken from different sources in different languages and combined in a single terminological entry. Example 3 shows this terminological entry expressed as a MARTIF <termEntry>, and Example E.1 in Annex E incorporates the same <termEntry> into a full MARTIF document.

5 Terminological entries in MARTIF

5.1 Data categories

5.1.1 Specification of Data Categories

MARTIF is designed to allow interchange of terminological data residing in terminology databases of any structure. Therefore each data category within the terminological entry shall be properly identified and relationships among the data categories shall be encoded within the entry so that they can be redistributed to any required arrangement in the target database.

The generic identifiers (GIs or tag names) specified in 5.1.2 and attributes specified in 5.1.3 shall be used to mark up (i.e., to name) data categories when they occur in MARTIF documents. In addition, Annex A specifies the full normalized forms that shall be used for these data categories in the MARTIF environment, as well as the attribute values that shall be used with them (see 5.1.4).

Some of these data categories identify sub-categories of information related to terms and the concepts they represent. Others provide administrative information related to the terminological entry itself and to file management. The data categories listed in Annex A are defined in ISO 12620 and shall be used for encoding terminological data for interchange using MARTIF. For this purpose, data category names used in local applications that do not comply with ISO 12620 shall be converted accordingly. If a data category required in a local application is not available in ISO 12620, system designers should notify the coordinators of that standard accordingly (see ISO 12620, Annex E).

5.1.2 MARTIF tags

Table 1 lists the specific Generic Identifiers that shall be used in terminological entries and bibliographic references within the MARTIF environment.

The MARTIF DTD is designed around three primary categories represented by the generic identifiers <term>, <descrip>, and <admin>. Annex C lists these and other GIs together with the data categories associated with them as per the examples shown in Annexes A and B, as well as those data categories associated with specific attributes.

Table 1 MARTIF tags and their description

<termEntry>	Shall contain a single complete terminological entry for one concept expressed in one language and comprising one or more terms and their associated descriptive and administrative data, or, in bilingual and multilingual terminology work, two or more closely related concepts comprising one or more terms in each language and their associated descriptive and administrative data. Attributes include: *type*, which classifies the terminological entry as per the data categories specified in ISO 12620.

Table 1, continued

<langSet>	Language set; within a <termEntry> element, shall be used to group multiple <tig>s and <ntig>s associated with a single language. The attribute *lang* is required, unless inherited
<tig>	Terminological information group; within a <termEntry> element, shall contain information elements associated with a single term, all of which must function on the same level; i.e., embedding within the subordinate elements of the <tig> is not allowed. The attribute *lang* is required, unless inherited.
<ntig>	Nested terminological information group; shall be used within a <termEntry> when some information elements are associated with internal elements rather than with the entire tig. The following elements shall be used to accommodate embedding within the <ntig>: <termGrp>, <termNoteGrp>, <descripGrp>, and <adminGrp>. The attribute *lang* is required, unless inherited.
<term>	Shall contain a single-word or multi-word term, or a symbolic designation regarded as a technical term.
<termGrp>	Shall contain a <term> element and possibly at least one nested element in addition to the term.
<termNote>	Shall contain term-related information. Attributes include: *type*, which classifies the <termNote> as per the data categories specified in Annex A, A.2 and A.3.
<termNoteGrp>	Shall contain a <termNote> element and possibly at least one nested element in addition to the term-related information. Shall be used to accommodate an additional level of embedding inside of the <termGrp> element.
<descrip>	Shall contain descriptive information such as a definition, context or explanation describing concepts and terms. Attributes include: *type*, which classifies the <descrip> as per the data categories specified in Annex A, A.4 - A.7.
<descripGrp>	Shall contain a <descrip> element and possibly at least one nested element in addition to the descriptive information.
<admin>	Shall contain administrative data. Attributes include: *type*, which classifies the <admin> as per the data categories specified in Annex A, A.9-A.10.
<adminGrp>	Shall contain an <admin> element and possibly at least one nested element in addition to the administrative information.

Table 1, continued

<date>	Shall contain a single date of the format YYYY-MM-DD, with the option for date-time notation as YYYY-MM-DD hh:mm:ss. Attributes include: *type*, which classifies the <date> as per data categories specified in Annex A, A.10.2.1.
<note>	Shall contain a note or annotation as comment relating to either an entire <termEntry>, an entire <tig> or <ntig> or one of the <...Grp> elements.
<descripNote>	Shall be used for note-type information used in <descripGrp> when the content of the note consists of a pick list.
<adminNote>	Shall be used for note-type information used in <adminGrp> when the content of the note consists of a pick list.
<ptr>	Shall consist of a pointer to another location in the current document. Attributes include: *type*, which classifies the <ptr> as per Annex A, A.12. *target*, which specifies the destination of the reference as one or more SGML identifiers. **NOTE –** The <ptr> GI cannot be associated with supplemental text as content of the element, as it consists solely of a start-tag with an embedded target. The <ptr>, <ref>, and <xref> elements are all considered to be *links* because they connect their current location to another targeted location within a document or to a location external to the document.
<ref>	Shall define a reference to another location in the current document, in terms of one or more identifiable elements. The <ref> GI is associated with supplemental text as content of the element, hence it consists of a start-tag with an embedded target, followed by the associated text, and closed by an end-tag. Attributes include: *type*, which classifies the <ref> as per Annex A. *target*, which specifies the destination of the reference as one or more SGML identifiers.
<xref>	Shall define a reference to a graphic, illustration, figure, table, or other external document or file using an extended pointer notation as the value of the *target* attribute of <xref>, e.g., <xref target= 'documentIdentifier'>, where the id value 'documentIdentifier' is a code for the targeted document. The user shall document the extended pointer notation that is being used by including an appropriate comment in the <encodingDesc> element of the DTD header.

Table 1, continued

	Attributes include: *type*, which classifies the external reference as per Annex A. *target*, which specifies the destination of the reference as one or more SGML identifiers. **NOTE –** External elements targeted by <xref> must be accessible to the target system for import purposes.
<hi>	Shall be used to mark a word or phrase as graphically highlighted in contrast to the surrounding text. Attributes include: *type*, which classifies the highlighted material as per Annex A. *target*, which specifies the destination of the reference as one or more SGML identifiers. NOTE – In terminology management, a major use of <hi> is to set off entailed terms, i.e., terms used in a definition, note, or other textual material that are defined elsewhere in the terminology resource. See also Annex A, A.2.2.2.
<foreign>	Shall identify a word or phrase as belonging to some language other than that of the surrounding text. Attributes include: *lang*, which identifies the language of the word or phrase marked.
<refObjectList>	Shall be used in the back matter and shall contain one or more back-matter objects, especially shared resources such as bibliographical entries, responsibility entries, namespace identifiers (URLs and FPIs), frequently referenced textual material, geographical location lists, external files, and the like. Attributes include: *type*, which classifies the <refObjectList> as per data categories specified in Annex A, A.11.4.1.
<refObject>	Shall contain an entry generally consisting of a shared resource such as bibliographic or responsibility information, a namespace identifier, frequently referenced textual material, an item of geographical information, a reference to an external file, and the like. Bibliographic entries should reside in the back matter or in an external document (in which case the bibliographic entry shall be referenced from the back matter using the <xref> element). NOTE – Some terminology documents contain full bibliographic entries in undifferentiated format as the content of the *source* data category (see ISO 12620:1999, A.10.19). This practice encourages redundancy and increased effort for data maintenance. This information should be converted to back-matter items if possible.

Table 1, continued

	Attributes include: *type*, which classifies the <refObject> as per data categories specified in Annex A, A.11.4.2. Unless otherwise specified, the type of <refObject> is inherited from the type of its respective <refObjectList>.
<itemSet>	Shall be used in the back matter and shall contain one or more individual items that are traditionally grouped together, e.g., the items *author's surname* and *author's first name* shall be grouped together in an <itemSet> of *type=author*. Attributes include: *type*, which classifies the <itemSet>, primarily according to the data categories listed in Annex B. This International Standard does not, however, specify the full range of other data categories that can be used with <itemSet>.
<item>	Shall contain an individual instance of back-matter information. Attributes include: *type*, which classifies information primarily as per the data categories specified in Annex B for bibliographic information. This International Standard does not, however, specify the full range of other data categories that can be used with <item>.
<itemGrp>	Shall contain one or more <item>s together with a <ptr>, <ref>, or <note>. Attributes include: *type*, which classifies information primarily as per the data categories specified in Annex B for bibliographic information. This International Standard does not, however, specify the full range of other data categories that can be used with <itemGrp>.

Figures 2 and 3 provide a schematic representation of the MARTIF full form tag name and of a full MARTIF element, respectively.

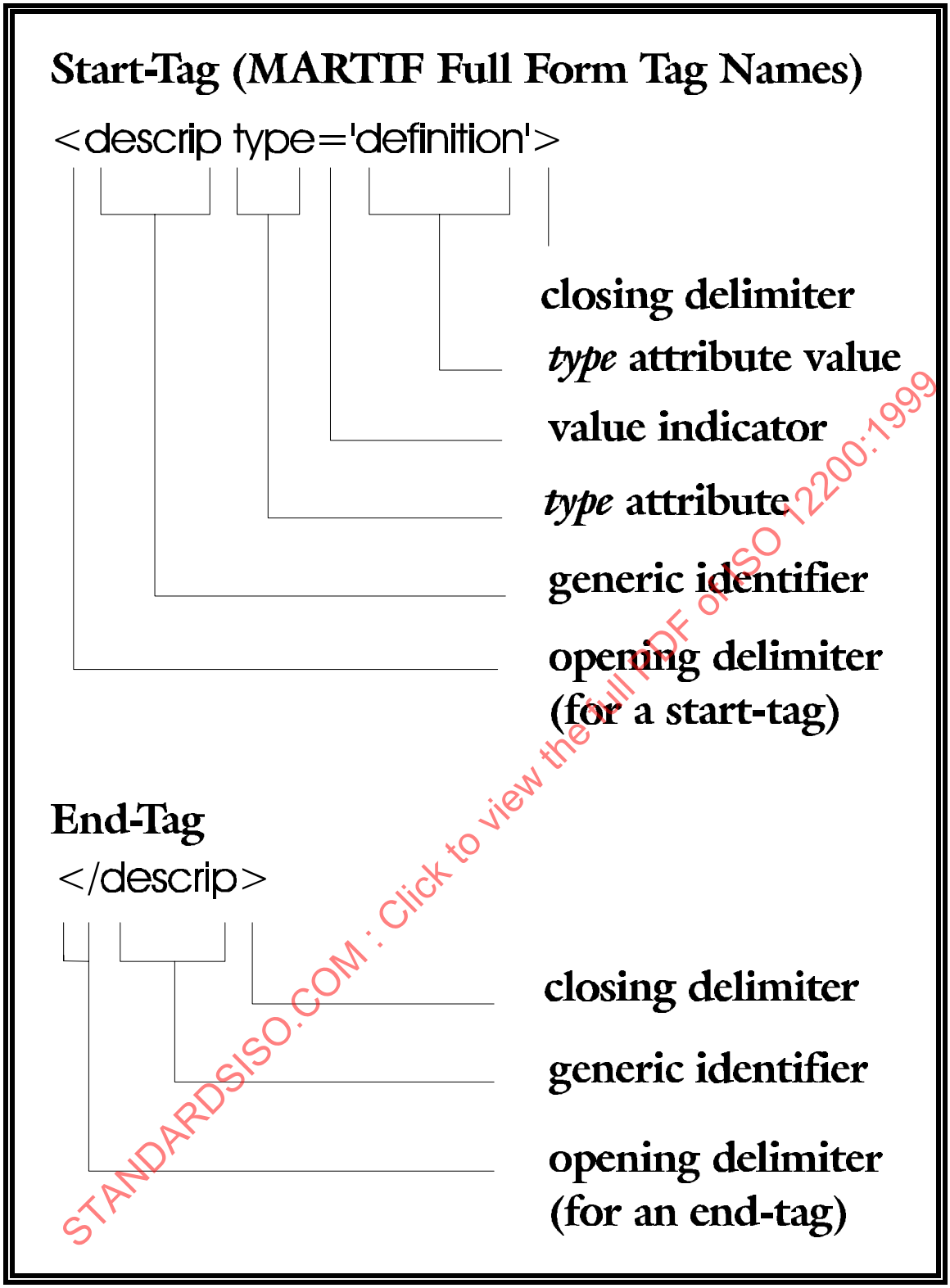

Figure 2 - Example of MARTIF full form tag names

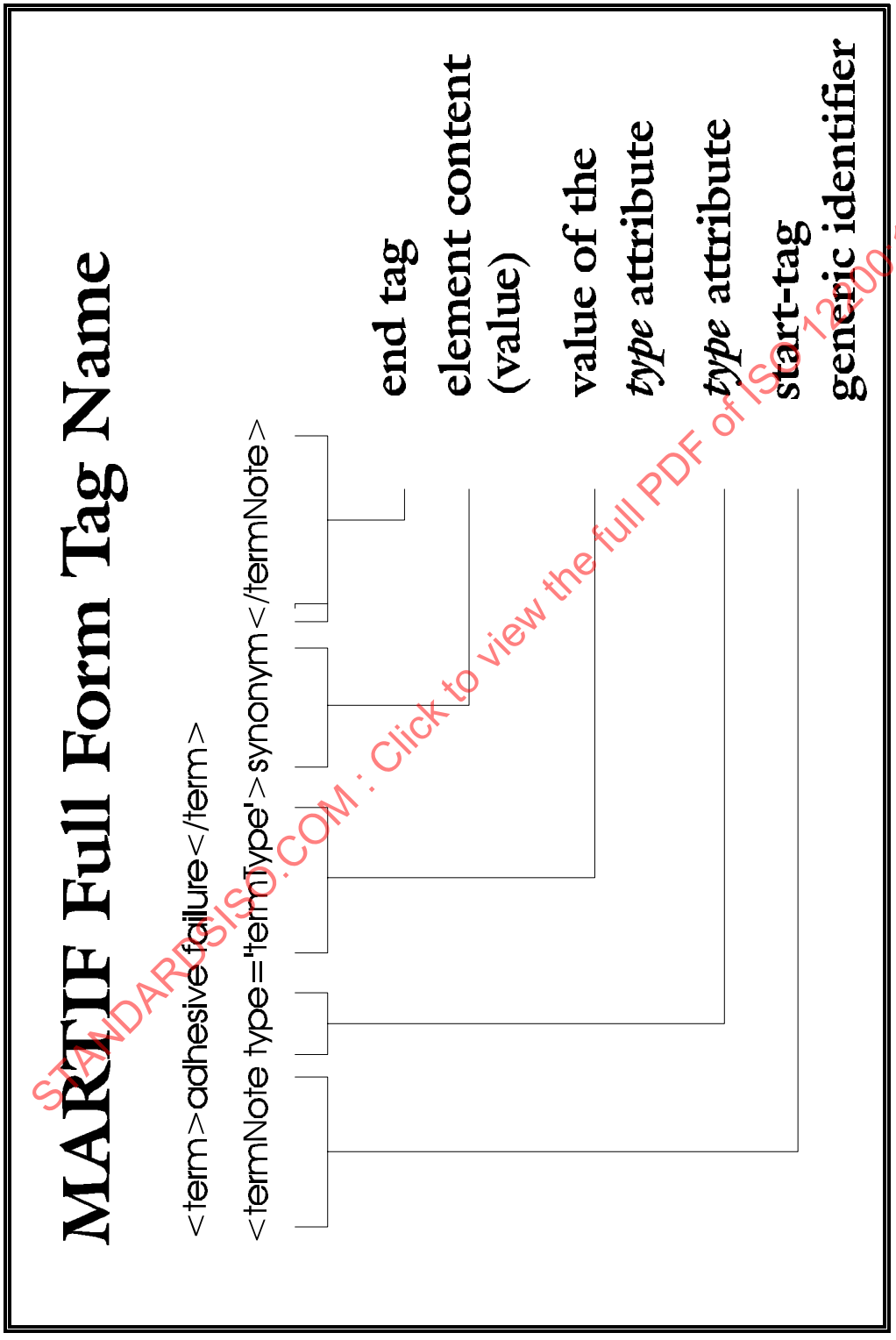

Figure 3 - Example of a MARTIF Element

5.1.3 MARTIF attributes

The attributes listed in Table 2 shall be used when it is necessary to qualify Generic Identifiers in a MARTIF document. Global attributes can be used with any MARTIF GI. Every element shall have an explicit or inherited *lang* attribute (see Clause 6). The attribute *type* shall be associated only with those GIs listed in Table 1 that specify the attribute *type*.

Table 2: List of MARTIF attributes

Global Attributes:

id Shall be the unique identifier of an element.
According to ISO 8879, the ID value of an *id* shall consist of an alpha character followed by a combination of alpha characters, digits, hyphens, or dashes. Each value of *id* shall be unique within a given document.
NOTE – If necessary, any element can be assigned an *id*, although it is more frequently the case that <termEntry>s are assigned *id*s. Values of *id* used in the examples in this International Standard are arbitrarily selected. Aside from the rules stated in this attribute specification, there are no uniform criteria for assigning meaningful *id* values in terminology databases. See also Annex A, A.10.14.

lang Shall indicate the language of the element content. The first two or three characters of the value of *lang* shall consist of two or three-letter symbols taken from ISO 639 or ISO 639-2 respectively (see clause 6).
Every MARTIF document shall include the *lang* attribute after the <martif> GI in the document header, e.g., <martif lang=en>. This declaration specifies the default language of the document (e.g., the language of concept-level definitions, notes, etc.). Elements contained within other elements shall automatically inherit the language of the higher element unless otherwise marked. The *lang* attribute shall be used with <langSet> or with <tig> and <ntig> unless inherited, although explicit use of *lang* is recommended for clarity in multilingual collections. It shall be used with any other element whose language differs from the language of the element in which it is embedded.

Nonglobal Attribute:

type Shall be used to associate a generic identifier (GI) with an attribute value in order to form the complete tag name for a data category.
NOTE – See Annexes A and B for specific use of the attribute *type* to identify data categories.

5.1.4 Values of the attribute *type*

When GIs are used to represent data categories, the GIs <term> and <note> shall be used independently. As shown in Annexes A and B, other data category names shall be formed by combining four components (see Figures 2 and 3):

- a generic identifier
- the attribute *type*
- the = symbol [called a *value indicator* in SGML]
- a value enclosed in matched pairs of single or double quotation marks

No individual instance of a GI shall be used with more than one data category.

NOTE 1 – Example 1 provides the following three elements of information about the term *MARTIF*: it is an acronym (line 4), an admitted term (line 5), and a term taken from ISO 12200 (line 8). The German <ntig> in Example 7 in 5.2.4 illustrates a further instance of embedding involving the use of <descripGrp> and embedded <ref> qualifiers (Lines 57 and 60).

EXAMPLE 1: Use of the attribute *type*

```
 1 <ntig lang=en>
 2     <termGrp>
 3         <term>MARTIF</term>
 4         <termNote type='termType'>acronym</termNote>
 5         <termNote type='normativeAuthorization'>admitted term</termNote>
 6         <termNote type='timeRestriction'>Replaced E-TIF (Electronic Terminology
 7          Interchange Format) as of August 1995</termNote>
 8         <ptr type='sourceIdentifier' target='ISO12200.1999'>
 9     </termGrp>
10 </ntig>
```

In cases where the *lang*= attribute is used or required, its content shall begin with a two or three letter language symbol taken from ISO 639 or ISO 639-2 (see Table 2 and Example 2).

EXAMPLE 2: Use of the attribute *lang*

<tig lang=fr> or <tig lang=fra>

NOTE 2 – Annex A lists the data categories taken from ISO 12620, together with their MARTIF full form tag names. ISO 12620 defines approximately two hundred data categories and permissible instances used as their content. Tags and attributes are specified in the DTD, but the values of the attribute *type* are not listed because it is desirable that the list remain open to accommodate the need for new data categories. Annex C lists data categories classified according to the generic identifiers and specific attributes with which they are associated.

5.2 MARTIF entry structures

5.2.1 MARTIF document structure

MARTIF documents shall possess a structure that conforms to ISO 8879 and to the MARTIF DTD specified in clause 8. This sub-clause discusses the structure of terminological entries (see Figure 4).

5.2.2 The terminological entry

As illustrated in Example 3, a terminological entry shall be introduced by the <termEntry> tag and shall contain one or more terms marked with the <term> tag. A single term and its associated data categories (e.g., <termNote>, <descrip>, <admin>), etc.) constitute a terminological information group. If all these elements function on the same level, the terminological information group is enclosed in a <tig> element. If additional sub-elements need to be embedded in any of the primary elements, the nested element <ntig> shall be used, together with the Group elements <termGrp>, <descripGrp>, or <adminGrp>. The element <termNoteGrp> is used when necessary to embed a second level of information inside a <termGrp>. A <termEntry> can be made up of a single <tig> or <ntig> or of a mixture of two or more <tig>s or <ntig>s. Multiple <tig>s or <ntig>s in any given language shall be grouped together in a <langSet>.

As stated above, each term shall occupy a <tig> or <ntig>, and if at all feasible, all of the <tig>s or <ntig>s associated with a concept should be contained in one <termEntry>. Any element that pertains specifically to information within one of the <...Grp> elements that does not pertain to the entire <tig> or <ntig> shall be embedded inside the respective <...Grp> element. Any information that pertains to the entire <termEntry> shall appear before the first <tig> or <ntig>. These principles are illustrated by the sample <termEntry> shown in Example 3.

NOTE – Example 3 represents the same data contained in Figure 1, but as a MARTIF <termEntry> consisting of three <ntig>s (English, German, and French, respectively), preceded by a *subjectField* data category that applies to the entire <termEntry> (Line 2). The same data are shown in Example E.1 of Annex E as a complete MARTIF document. White space (indentation, blank lines, etc.) has been used throughout the examples in this International Standard to facilitate reader understanding. Such presentational conventions are undesirable in actual data marked up for interchange, especially white space inside a character string constant.

Instead of the accented characters used in the German and French terminology information groups shown in Example 1, Example 3 uses special character strings called *character entities* (see e.g., line 14, ä for ä and line 17, ü for ü). This convention is explained in detail in 8.2.4.

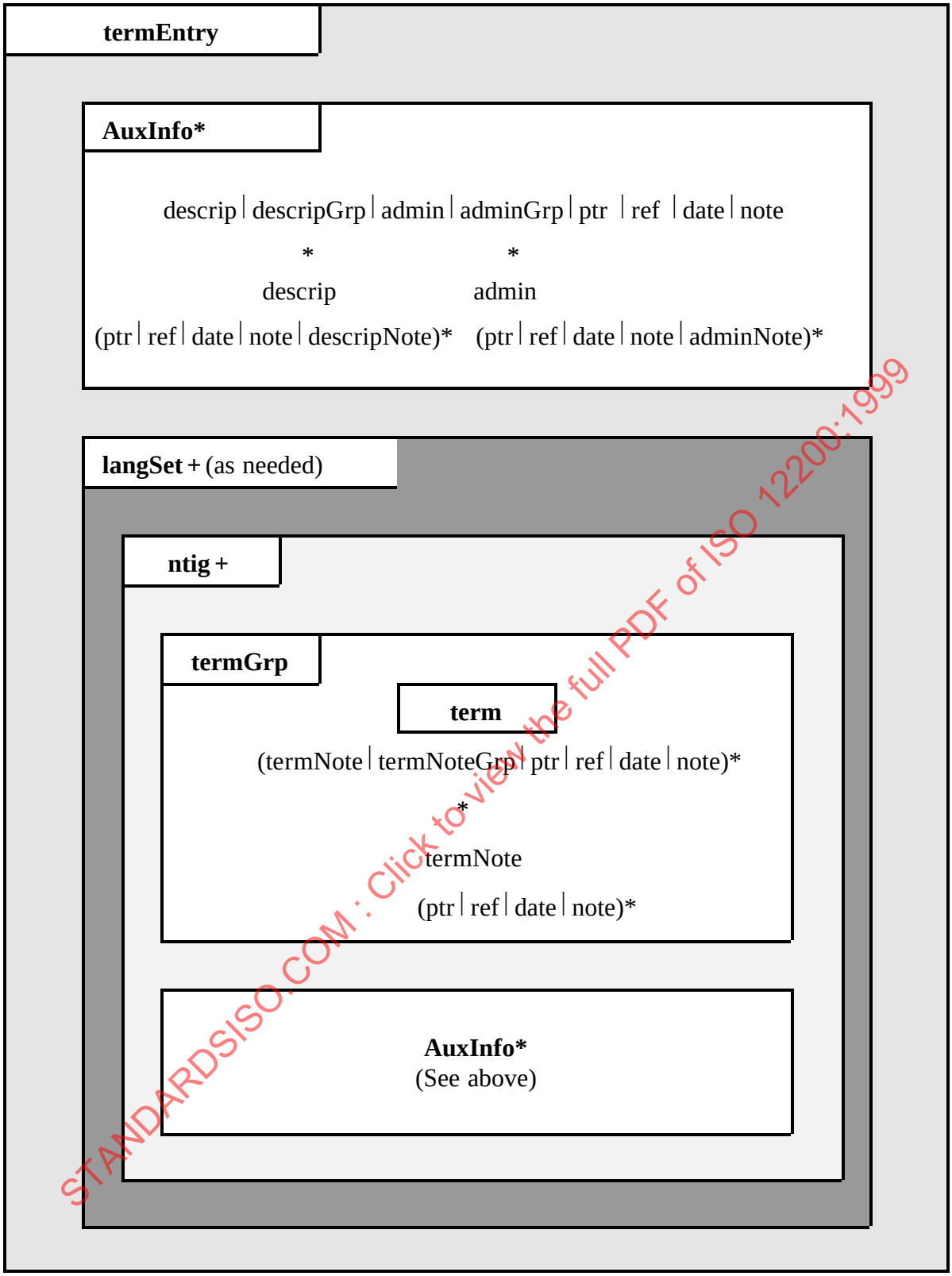

Figure 4 —The basic structure of a MARTIF terminological entry

EXAMPLE 3: Full MARTIF term entry

```
1  <termEntry id='ID000073578'>
2      <descrip type='subjectFieldLevel1'> appearance of materials </descrip>
3
4      <ntig lang=en>
5          <termGrp><term>opacity</term>
6          <termNote type='partOfSpeech'>n</termNote></termGrp>
7          <descripGrp><descrip type='definition'>degree of obstruction to the transmission of
8          visible light</descrip><ptr type='sourceIdentifier' target='ASTM.E284'></descripGrp>
9          <adminGrp><admin type='responsibility'>E12</admin> </adminGrp>
10     </ntig>
11
12     <ntig lang=de>
13         <termGrp><term> Opazit&auml;t</term>
14         <termNote type='partOfSpeech'>n</termNote>
15         <termNote type='gender'>f</termNote></termGrp>
16         <descripGrp><descrip type='definition'>Ma&szlig; f&uuml;r die
17         Lichtundurchl&aumlt;ssigkeit </descrip><ref type='sourceIdentifier' target='DIN-
18         6730.1996-05'>p. 383</ref></descripGrp>
19         <adminGrp><admin type='responsibility'>Normenausschu&szlig; Papier und Pappe
20         (NPa) im DIN Deutsches Institut f&uuml;r Normung e.V. </admin></adminGrp>
21     </ntig>
22     <ntig lang=fr>
23         <termGrp><term>opacit&eacute;</term>
24         <termNote type='partOfSpeech'>n</termNote>
25         <termNote type='gender'>f </termNote> </termGrp>
26         <descripGrp><descrip type='definition'>rapport du flux lumineux incident au flux
27         lumineux transmis ou r&eacute;fl&eacute;chi par un noircissement
28         photographique</descrip>
29         <ptr type='sourceIdentifier' target='HJdi1986'></descripGrp>
30         <adminGrp><admin type='responsibility'>C.I.R.A.D.</admin> </adminGrp>
31     </ntig>
32 </termEntry>
```

5.2.3 Treatment of quasi-equivalents

Despite the rule that all <tig>s associated with a single concept shall occupy the same <termEntry>, there are cases where it can be argued that the individual terms under consideration apply to more than one very closely related concept. In such cases, it is permissible to treat each term in its own <termEntry>, and for related entries to be joined by links (<ptr>s or <ref>s) where appropriate. The target of the link shall be the unique *id* assigned to the targeted element. For instance, Example 4 contains three <termEntry>s, each for a concept that is not quite equivalent to the other concepts. These entries are identified by the respective *id* values 'QAen01', 'QAfr01', and 'QAde01', respectively (starting on lines 1, 24, and 51). Each entry includes a <ptr> linking it to the other entries. The <hi> element can be used to highlight entailed terms, i.e., terms that are defined in other entries, and at the same time to link to those entries.

EXAMPLE 4: Treatment of quasi-equivalents

```
<termEntry id='QAen01'>
    <descrip type='subjectFieldLevel1'>quality assurance</descrip>
    <ptr type='quasiEquivalentTerm' target='QAfr01'>
    <ptr type='quasiEquivalentTerm' target='QAde01'>

    <ntig lang=en>
        <termGrp><term>inspection</term>
        <termNote type='partOfSpeech'>n</termNote></termGrp>

        <descripGrp><descrip type='definition'>activity such as measuring, examining testing
        or gauging one or more characteristics of an <hi type='entailedTerm'
        target='QAen1.1'>entity</hi> and comparing the results with specified requirements in
        order to establish whether <hi type='entailedTerm' target='QAen2.9'>conformity</hi> is
        achieved for each characteristic</descrip>
        <ptr type='sourceIdentifier' target='ISO8402.en2.15'>
        </descripGrp>

        <adminGrp><admin type='responsibility'>ISO TC 176</admin>
        </adminGrp>
    </ntig>

</termEntry>

<termEntry id='QAfr01'>
    <descrip type='subjectFieldLevel1'>quality assurance</descrip>
    <ptr type='quasiEquivalentTerm' target='QAen01'>
    <ptr type='quasiEquivalentTerm' target='QAde01'>

    <ntig lang=fr>
        <termGrp><term>contr&ocirc;le</term>
        <termNote type='partOfSpeech'>n</termNote>
        <termNote type='gender'>f</termNote></termGrp>

        <descripGrp><descrip type='definition'>activit&eacute;s telles que mesurer, examiner,
        essayer ou passer au calibre une ou plusieurs caract&eacute;ristiques d'une <hi
        type='entailedTerm' target='QAfr1.1'>entit&eacute;</hi> et comparer les
        r&eacute;sultats aux exigences sp&eacute;cifi&eacute;s en vue de d&eacute;terminer si
        la <hi type='entailedTerm' target='QAfr2.9'> conformit&eacute;</hi> est obtenue pour
        chacune de ces caract&eacute;ristiques</descrip>
        <ptr type='sourceIdentifier' target='ISO8402-fr2.15'>
        <note>En fran&ccedil;ais, le terme 'inspection' peut d&eacute;signer une
        activit&eacute; de surveveillance de la qualit&eacute; conduite dans le cadre d'une
        mission bien d&eacute;finie.</note>
        </descripGrp>

```

```
46          <adminGrp><admin type='responsibility'>ISO TC 176</admin> </adminGrp>
47      </ntig>
48
49  </termEntry>
50
51  <termEntry id='QAde01'>
52      <descrip type='subjectFieldLevel1'>quality assurance</descrip>
53      <ptr type='quasiEquivalentTerm' target='QAfr01'>
54      <ptr type='quasiEquivalentTerm' target='QAen01'>
55
56
57      <ntig lang=de>
58          <termGrp><term>Pr&uuml;fen</term>
59          <termNote type='partOfSpeech'>n</termNote>
60          <termNote type='gender'>n</termNote></termGrp>
61
62          <descripGrp><descrip type='definition'>feststellen, ob der Pr&uuml;fgegenstand
63          (Probek&ouml;rper, Probe, Me&szlig;ger&auml;t) eine oder mehrere vereinbarte oder
64          vorgeschriebene oder erweiterte Bedingungen erf&uuml;llt, insbesondere ob
65          vorgegebene Fehlergrenzen oder Toleranzen eingehalten werden</descrip>
66          <note>Mit dem Pr&uuml;fen ist daher immer eine Entscheidung verbunden. Das
67          Pr&uuml;fen kann subjektiv durch Sinneswahrnehmung ohne Hilfsger&auml;t oder
68          objektiv mit Me&szlig;ger&auml;ten oder mit Pr&uuml;fger&auml;ten, die auch
69          automatisch arbeiten k&ouml;nnen, geschehen. Ein subjektives Pr&uuml;fen
70          f&uuml;hrt meist nur zu einer qualitativen Angabe.</note>
71          <ref type='sourceIdentifier' target='FHtb1985'>p. 405-406</ref>
72          <descrip type='transferComment'>German 'Pr&uuml;fen' encompasses both English
73          'inspection' and 'test'.</note>
74          </descripGrp>
75          <adminGrp><admin type='responsibility'> Normenausschu&szlig;
76          Qualit&auml;tsmanagement Systeme und angewandte Statistik im DIN Deutsches
77          Institut f&uuml;r Normung e.V.</admin></adminGrp>
78      </ntig>
79
80  </termEntry>
```

5.2.4 Rules governing the <termEntry>

The following rules apply to a <termEntry>

1. One <termEntry> shall be created for one (i.e., for each individual) concept.

2. Each term, synonym, variant, etc. shall occupy its own <tig> or <ntig>, with appropriate cross-references if necessary. (See Example 5 for the use of <tig> and Example 6 for the use of <ntig>.)

3. The normalized mode of the data categories shall be used (see normative Annex A).

4. If any element refers to the entire <termEntry> and not just to one <langSet>, <tig> or <ntig>, it shall be placed after the <termEntry> tag and before the start tag for the first <langSet>, <tig> or <ntig>.

5. If, for instance, a <note>, <termNote>, or link exists that refers to an individual element (such as to a <term>, etc.), but not to the entire terminological information group, the <ntig> element shall be used, together with the appropriate Group element (<termGrp>, <descripGrp> or <adminGrp>). The item in question shall be enclosed in the Group element. Both <tig> and <ntig> elements can be used together in the same <termEntry>.

6. In the event that an additional note or link shall be referenced to one of the data categories introduced by the <termNote> tag, <termNoteGrp> shall be introduced into the <termGrp> element, together with <termNote> and the respective <note> (see Example 6).

7. If an element must be referenced to another element embedded inside one of the <. . . Grp> elements, but the first element does not pertain to the entire group, the reference shall be made using the <ref> tag and the referenced information shall be included as the content of the <ref> element (see Example 7).

8. Standard values for language symbols (*lang*=) shall be used as specified in ISO 639 and ISO 639-2. Further specification of regional variation and writing system declarations (WSD) shall be indicated as set forth in Clause 6.

9. The *lang* attribute shall appear with the <martif> element in the header of every MARTIF document in order to specify the default language of the document. Multiple <ntig>s in a given language shall be enclosed in a <langSet>, which shall contain a *lang*= attribute identifying the language of the <langSet> if this language differs from the default language. Freestanding <tig>s or <ntig>s shall also contain a *lang*= attribute if their language differs from the default language. Sub-elements within <tig> and <ntig> inherit their respective language unless the sub-element is accompanied by an explicit *lang* attribute or is contained in another element with its own *lang* identifier.

10. Standardized values for dates shall be used as specified in ISO 8601 (e.g., 1995-10-30, with the possibility of expansion to date and time, e.g., 1995-10-30 12:32:41 where needed.). See Annex A, A.10.2 for data category names of administrative dates used in terminology management.

Example 5 illustrates a simple <tig> without the inclusion of embedded information (see Rule 2).

EXAMPLE 5: <tig> entry

```
<termEntry id=’ASTMD1517-053’>

    <tig lang=en>
        <term>fancy leather</term>
        <descrip type=’definition’>leather made from hides and skins of all kinds that have
        commercial importance and value primarily because of grain, or distinctive finish,
        whether natural or the result of processing</descrip>
        <note>Such processing may be graining, printing, embossing, ornamenting (including
        gold, silver, and aluminum finishes), or any other finishing operation used to enhance
        the appeal of the leather.</note>
        <admin type=’responsibility’>ASTM D1517</admin>
    </tig>

</termEntry>
```

Example 6 illustrates the way that <langSet> can be used to enclose multiple <ntig>s for terms in the same language (lines 15-36). In the <ntig> for the French word *inspection* shown here, there is a note referenced to a <termNote type=’geographicalUsage’>, which necessitates the use of a <termNoteGrp> inside <termGrp> (line 29, ff). As this example focuses on the use of <termNote> and <termNoteGrp>, other elements have been represented by ellipses in the term entry (see Rules 2 and 5).

EXAMPLE 6: <ntig> entry with use of <langSet>

```
<termEntry id=’QA2.556’>
    <descrip type=’subjectFieldLevel1’>quality assurance</descrip>
    <ref type=’sourceIdentifier’ target=’jbQA1994’>p. 345</ref>

    <langSet lang=en>
    <ntig>
        <termGrp>
            <term>inspection</term>
            <termNote type=’partOfSpeech’>n</termNote>
        </termGrp>
        . . .
    </ntig>
    </langSet>

    <langSet lang=fr>
    <ntig>
        <termGrp>
            <term>contr&ocirc;le</term>
            <termNote type=’gender’>f</termNote>
            <termNote type=’geographicalUsage’>FR</termNote>
        </termGrp>
        . . .
    </ntig>
```

```
24
25      <ntig>
26          <termGrp>
27              <term>inspection</term>
28              <termNote type='gender'>f</termNote>
29              <termNoteGrp><termNote type='geographicalUsage'>CA</termNote>
30              <note>Although an earlier standard cited the Canadian usage, the current standard
31              has eliminated this reference.</note>
32              </termNoteGrp>
33          </termGrp>
34          . . .
35      </ntig>
36      </langSet>
37
38  </termEntry>
```

In Example 7, the notes that follow the <descripGrp> in each parallel <ntig> pertain to the term treated in the <ntig> (Lines 10, 26, and 48 ff.). The information included in the <ref> element that references the note in the German <ntig> (line 56 ff.) is a note on that note, and the information in the second <ref> is a note on the note on the note (see Rule 6). Such complex data structures should be avoided unless absolutely necessary to meet user needs.

EXAMPLE 7: Use of <note> and notes on notes

```
 1  <termEntry id='ISO9000-1-A1'>
 2      <descrip type='subjectFieldLevel1'>quality assurance</descrip>
 3      <ref type='sourceIdentifier' target='ONORM-ISO9000-1'>p. 34</ref>
 4
 5      <ntig lang=en>
 6          <termGrp><term>quality</term>
 7          <termNote type='partOfSpeech'>noun</termNote></termGrp>
 8          <descripGrp><descrip type='definition'>totality of characteristics of an entity that bear
 9          on its ability to satisfy stated and implied needs</descrip>
10          <note id='ISO9000-1A1en21'>The term 'quality' is not used as a single term to express
11          a degree of excellence in a comparative sense, nor should it be used in a quantitative
12          sense for technical evaluations. To express these meanings, a qualifying adjective
13          should be used. For example, use can be made of the following terms:
14          a) 'relative quality' where . . .
15          b) 'quality level' where . . .</note></descripGrp>
16          <adminGrp><admin type='responsibility'>ISO TC 176</admin>
17          </adminGrp>
18      </ntig>
19
20      <ntig lang=fr>
21          <termGrp><term>qualit&eacute;</term>
22          <termNote type='gender'>m</termNote></termGrp>
23          <descripGrp><descrip type='definition'>ensemble des caract&eacute;ristiques d'une
24          entit&eacute; qui lui conf&egrave;rent l'aptitude &agrave; satisfaire des besoins
25          exprim&eacute;s et implicites</descrip>
```

```
        <note id='ISO9000-1A1fr21'>Il convient que le terme &laquo;qualit&eacute;&raquo;
        ne soit utilis&eacute; isol&eacute;ment ni pour exprimer un degr&eacute; d'excellence
        dans un sens comparatif, ni pour des &eacute;valuations techniques dans un sens
        quantitatif. Pour exprimer ces deux sens, il est bon qu'un adjectif qualificatif soit
        utilis&eacute;. Par exemple, on peut employer les termes suivants:
        a) &laquo;qualit&eacute; relative&raquo; lorsque . . .
        b) &laquo;niveau de qualit&eacute;&raquo; dans un sens quantitatif ...</note>
        </descripGrp>
        <adminGrp><admin type='responsibility'>ISO TC 176
        </admin></adminGrp>
    </ntig>

    <ntig lang=de>
        <termGrp><term>Qualit&auml;t</term>
        <termNote type='gender'>f</termNote></termGrp>
        <descripGrp>
            <descrip type='definition'>Gesamtheit von Merkmalen (und Merkmalswerten) einer
            Einheit bez&uuml;glich ihrer Eignung, festgelegte und vorausgesetzte Erfordernisse
            zu erf&uuml;llen</descrip>
            <note>Fu&szlig;note in der deutschsprachigen Fassung: 'Festgelegte und
            vorausgesetzte Erfordernisse' sind zwei spezifische Konkretisierungen ...
            </note>
            <note id='ISO9000-1A1de21'>Die Benennung 'Qualit&auml;t' sollte weder als
            einzelnes Wort gebraucht werden, um einen Vortrefflichkeitsgrad im vergleichenden
            Sinn auszudr&uuml;cken, noch sollte sie in einem quantitativen Sinn f r technische
            Bewertungen verwendet werden. Um diese Bedeutung auszudr&uuml;cken, sollte
            ein qualifizierendes Adjektiv benutzt werden. z.B. k&ouml;nnen folgende
            Benennungen verwendet werden:
            a) 'Relative Qualit&auml;t', wo . . .
            b) 'Qualit&auml;tslage' in einem quantitativen Sinne . . .</note>
            <ref type='note' id='ISO9000-1A1en21sub1' target='ISO9000-
            1A1de21'>Fu&szlig;note in der deutschsprachigen Fassung: An diesen Stellen
            weicht die Originalfassung . . . ab.</ref>
            <ref type='sourceIdentifier' target='ISO9000-1A1en21sub1'>p. 33</ref>
        </descripGrp>
        <adminGrp><admin type='responsibility'>DIN/ONORM/ SNV/ISO TC 176
        committees</admin></adminGrp>
    </ntig>
    </termEntry>
```

5.2.5 Links

Terminology documents can utilize a variety of cross-references between <termEntry>s, for instance as illustrated by the <ptr> elements used in Example 4 in 5.2.3. Links shall be implemented using <ptr> and <ref> linking elements, together with a value of the attribute *type* to indicate the category of link that is being used.

NOTE – Links constitute relational information rather than data category information. Therefore, types of links are defined in Annex A, A.12 of this International Standard, but they are not the subject of ISO 12620. Annex C indicates data categories that can be used with <ptr> and <ref>, as well as with <hi>, to form links.

The difference between <ptr> and <ref> can be illustrated quite clearly by examining their use for linking <termEntry>s to bibliographic entries. If, as is the case with the reference to ASTM E284 in Example 8, the total source identifier is contained as the content of the *target* attribute of the link, <ptr> shall be used. If, on the other hand, a page number is included, this page number shall appear as the content of a linking element introduced by the <ref> tag.

EXAMPLE 8: Use of <ptr> and <ref>

<ptr type=’sourceIdentifier’ target=’ASTM E284’>
<ref type=’sourceIdentifier’ target=’FHdn1983’> p. 383 </ref>

NOTE – These <ptr> and <ref> links point to material in the back matter. The format for the treatment of the bibliographic entries targeted by these links is discussed in 8.4.4 in the context of the MARTIF back element. They can, for instance, point to bibliographic entries contained in a <refObjectList type=’bibl’>containing either bibliographic entries in the form of <refObject>s or they can point to <xref> elements in the <back> element of the MARTIF document, which in turn point to external bibliographic information in a separate SGML document encoded according to the DTD described in ISO 12083. This document must reside in the same system as the MARTIF document. The sample MARTIF document shown in Example 10 shows the second option. The sample document shown in Annex E includes complete bibliographic information in the <back> element.

MARTIF does not provide the capability to differentiate the individual elements in the bibliographic reference if the full bibliographic citation is included in the <termEntry>. In such cases, the citation shall be identified with the tag name <admin type=’source’>and shall occur as a self-contained data category. Although some terminological databases do include full bibliographic information in each terminological entry, this practice can lead to redundancy and increased data management costs.

6 Character encoding and the *lang* attribute

The language of every element in a MARTIF document shall be clearly indicated. If the language of the element is the same as that of the element in which it is embedded (e.g., the default <martif> language or the language of the element s respective <langSet>, <tig>, or <ntig>), no additional explicit markup is required. This feature is commonly referred to as the *principle of inheritance*. If, however, the language of the element differs from that of its surrounding context, an explicit *lang* attribute shall be used to override the prevailing language identifier. A typical example might be the use of the <foreign> element to set off a foreign word or phrase (e.g., lines 4 and 5 in Example 9).

EXAMPLE 9: Use of <foreign>

```
1 <ntig lang=en>
2       <termGrp><term>inspection</term></termGrp>
3       <descripGrp><descrip type='definition'>...</descrip>
4       <note>The French usage of <foreign lang=fr>contr&ocirc;le</foreign> corresponds to the
5       North American variant <foreign lang=fr>inspection </foreign>, which illustrates the
6       influence of English on North American French.</note></descripGrp>
7 </ntig>
```

NOTE – *lang* does not apply to the data *inside* a tag, rather only to the data *between* the tags (i.e., *after* the '>' of the start-tag to just *before* the '<' of the end-tag).

The value of the *lang* attribute shall be or begin with a two or three-letter, lowercase language code element as specified in ISO 639 or ISO 639-2. It can feature an extension consisting of uppercase country code elements as specified in ISO 3166-1 or writing system information as noted below, or both.

Character entities shall be encoded according to ISO 8879:1986, Annex D, where possible (see 8.2.4), and exceptions shall be recorded in the <encodingDesc> element of the document header (see 8.3). Each language symbol shall be associated with a writing system, which includes a set of characters as well as conventions affecting directionality, correspondence between upper and lower case, and sorting order. The <encodingDesc> element shall also be used to record all relevant information about the writing systems used in the document. In the event that more than one writing system or representational system is used to represent a language (e.g., representation in differing scripts, such as Latin and Cyrillic, or representation via transliteration, transcription, or romanization, or variations on any of these systems), an extension shall be appended to the language symbol using index numbers, e.g., ru1, ru2, ru3, etc. All extensions shall be explained in the <encodingDesc> and referenced to a standard character repertoire (e.g., ISO 10646), a set or sets of SGML character entities, or a standard system for alternate graphical representation (transliteration, transcription, or romanization system). 8.3 also provides additional information on documenting Writing System Declarations.

7 Interchange procedures

In order to carry out terminology interchange with MARTIF, terminological data shall be exported from the source database to MARTIF, usually by means of an export routine designed for this purpose. Import routines are then necessary to import MARTIF documents into target databases. When setting up any individual interchange relationship, specific features, such as system architecture and entry structure of the source and target databases, should generally be examined to determine if it will be necessary to negotiate conversion routines in order to facilitate problem-free interchange.

The data categories used shall be identified as indicated in Annex A. In assigning data category names from Annex A to data categories in the source database, users should consult ISO 12620 to ensure that data category content is harmonized with the data category definitions provided in ISO 12620.

8 The Document Type Definition (DTD) for MARTIF

8.1 The overall structure of terminology documents

The full MARTIF Document Type Definition (DTD) shall consist of the three-component DTD files represented here in Figure 9 (the framework), Figure 10 (the body), and Figure 11 (the character entities). These components shall be combined as specified in the prolog.

The overall structure of a MARTIF document shall conform to the principles laid down in ISO 8879. A complete MARTIF document shall consist of a prolog, followed by a document instance of type MARTIF (for Machine-Readable Terminology Interchange Format). The document instance shall consist of a header (<martifHeader>) followed by the text, which in turn consists of optional front matter, the body (a sequence of terminological entries), and optional back matter.

NOTE – Figure 5 summarizes the components of a MARTIF file (in outline form) represented as a complete SGML document. Figure 6 shows the structure of the document instance as expressed by standard SGML generic identifiers. Example 10 shows a sample MARTIF document that contains a prolog, a header, no front, a body (consisting in this case of three terminological entries), and a back.

Example 10 contains a complete MARTIF document consisting of a prolog (line 1), a <martifHeader> (line 7, ff.) , a body (line 21, ff.) made up of three <termEntry>s (starting on lines 23, 58, and 89, resp.), and a back (line 124, ff.), which in this case is comprised of a <refObjectList> containing a single <refObject> consisting of an external reference to a bibliographic file. The file is cited as residing in a subdirectory for ISO 12083-conformant files, and this subdirectory shall be present on the same system as the MARTIF document in order to facilitate the external reference. The three <termEntry>s provide an illustration of linkage between related concepts.

I. Prolog
II. Document instance (<martif lang=en>)
  A. header (<martifHeader>)
  B. text
    1. front (optional)
    2. body
      a. first terminological entry <termEntry> (minimum of one)
      b. second terminological entry <termEntry>
      c. etc. (additional terminological entries)
    3. back (optional)

Figure 5—Basic components of a MARTIF document

```
<martif lang=en>
<martifHeader>
... (The header goes here.)
</martifHeader>
<text>
    <body>
        ... (The terminological entries go here.)
    </body>
    <back>
        ... (Included bibliographic entries go here.)
        ... (Any external references (<xref>s) also go here.)
    </back>
</text>
</martif>
```

Figure 6—Structure of the document instance

EXAMPLE 10: Sample MARTIF document

```
<!DOCTYPE martif PUBLIC "ISO 12200:1999//DTD for MARTIF (framework) //EN" [
<!ENTITY % mtf-body PUBLIC "ISO 12200:1999//DTD for MARTIF (body) //EN">
<!ENTITY % mtf-ents PUBLIC "ISO 12200:1999//ENTITIES for MARTIF (sets) //EN">
 ]>

<martif lang=en>
<martifHeader>

<fileDesc>
<titleStmt><title>Example 10: a complete MARTIF document</title>
</titleStmt>
<publicationStmt><p>not published separately</p></publicationStmt>
<sourceDesc><p>from ISO DIS 12200, body: Example 10</p></sourceDesc>
</fileDesc>
<revisionDesc>
<change><p>1995-11-15: edited to accommodate declaration of public
document</p></change>
</revisionDesc>
</martifHeader>

<text>
<body>

<termEntry id='ISO-3534-2.32'>
    <descrip type='subjectFieldLevel1'>statistics</descrip>
    <ref type='sourceIdentifier' target='ISO-3534'>p. 15</ref>
    <admin type='responsibility'>ISO TC 69</admin>

    <ntig lang=en>
        <termGrp>
            <term>mean deviation</term>
            <termNote type='partOfSpeech'>noun</termNote>
        </termGrp>
        <descripGrp>
            <descrip type='definition'>the arithmetic mean of the deviations from an origin
            when all deviations are given a positive sign</descrip>
            <note>Generally, the chosen origin is the arithmetic mean, although the mean
            deviation is minimal when the median is taken as an origin.</note>
        </descripGrp>
    </ntig>

    <ntig lang=fr>
        <termGrp>
            <term>&eacute;cart moyen</term>
            <termNote type='partOfSpeech'>noun</termNote>
            <termNote type='gender'>m</termNote>
        </termGrp>
        <descripGrp>
```

```
49            <descrip type='definition'>moyen arithm&eacute;tic des &eacute;carts par rapport
50          &agrave; une origine; les &eacute;carts sont pris en valeur absolue.</descrip>
51            <note>G&eacute;n&eacute;ralement, l'origine choisie est la moyenne
52          arithm&eacute;tic bien que l'&eacute;cart moyen soit minimal quand on prend la
53          m&eacute;diane pour origine.</note>
54          </descripGrp>
55      </ntig>
56  </termEntry>
57
58  <termEntry id='ISO-3534-2.53'>
59      <descrip type='subjectFieldLevel1'>statistics</descrip>
60      <ref type='sourceIdentifier' target='ISO-3534'>p. 19</ref>
61      <admin type='responsibility'>ISO TC 69</admin>
62
63      <ntig lang=en>
64          <termGrp>
65              <term>sampling error</term>
66              <termNote type='partOfSpeech'>noun</termNote>
67          </termGrp>
68          <descripGrp>
69              <descrip type='definition'>part of the total estimation error of a parameter due to
70              the random nature of the sample</descrip><ptr type='relatedTerm' target='ISO-
71              3534-2.56'>
72          </descripGrp>
73      </ntig>
74
75      <ntig lang=fr>
76          <termGrp>
77              <term>erreur d'&eacute;chantillonage</term>
78              <termNote type='partOfSpeech'>noun</termNote>
79              <termNote type='gender'>m</termNote>
80          </termGrp>
81          <descripGrp>
82              <descrip type='definition'>partie de l'erreur totale d'estimation d'un
83              param&egrave;tre et la valeur vraie de ce param&egrave;tre</descrip><ptr
84              type='relatedTerm' target='ISO-3534-2.56'>
85          </descripGrp>
86      </ntig>
87  </termEntry>
88
89  <termEntry id='ISO-3534-2.56'>
90      <descrip type='subjectFieldLevel1'>statistics</descrip>
91      <ref type='sourceIdentifier' target='ISO-3534'>p. 19</ref>
92      <admin type='responsibility'>ISO TC 69</admin>
93
94      <ntig lang=en>
95          <termGrp>
96              <term>standard error</term>
97              <termNote type='partOfSpeech'>noun</termNote>
98          </termGrp>
99
```

```
100         <descripGrp>
101             <descrip type='definition'>the standard deviation of an estimator; the standard error
102             provides an estimation of the random part of the total estimation error involved in
103             estimating a population parameter from a sample</descrip>
104         </descripGrp>
105     </ntig>
106
107     <ntig lang=fr>
108         <termGrp>
109         <term>erreur-type</term>
110             <termNote type='partOfSpeech'>noun</termNote>
111             <termNote type='gender'>m</termNote>
112         </termGrp>
113         <descripGrp>
114             <descrip type='definition'>&Eacute;cart-type d'un estimateur; l'erreur-type permet
115             une estimation de la partie al&eacute;atoire de l'erreur totale d'estimation faite en
116             estimant un param&egrave;tre de la population &agrave; partier d'un
117             &eacute;chantillon</descrip>
118             <ptr type='relatedTerm' target='ISO-3534-2.53'>
119         </descripGrp>
120     </ntig>
121 </termEntry>
122 </body>
123
124 <back>
125     <refObjectList type='bibl'>
126         <refObject>
127             <item id='ISO-3534'>
128                 <xref target='c:\bibl\ISO-12083\ISO-3534BIB.NIS'>ISO 12083-conformant
129                 bibliography file</xref>
130             </item>
131         </refObject>
132     </refObjectList>
133
134 </back>
135
136 </text>
137
138 </martif>
```

8.2 Prolog

8.2.1 Prolog declarations

The prolog component in Example 10 (see 8.1) is:

```
<!DOCTYPE martif PUBLIC "ISO 12200:1999//DTD for MARTIF (framework) //EN" [
<!ENTITY % mtf-body PUBLIC "ISO 12200:1999//DTD for MARTIF (body) //EN">
<!ENTITY % mtf-ents PUBLIC "ISO 12200:1999//ENTITIES for MARTIF (sets) //EN">
]>
```

These lines, which should be essentially the same for all MARTIF documents, refer to three external files, each identified by a public name. Each of these three files is a DTD fragment, but the prolog combines them into the full MARTIF DTD.

The prolog (lines 1-4) declares that there can be any number of document instances of type <martif>. The *lang=en* attribute indicates that the default metalanguage of the document is English. The overall structure of the document instance outlined in Figure 5 is illustrated in Example 10 (see 8.1).

Depending on the default SGML declaration used by the selected parser, it can be necessary to include an SGML declaration at the beginning of the document (preceding the document type declaration statement in the prolog) in order to parse a MARTIF document. Typically, a default SGML declaration will suffice except that in the QUANTITY section of the declaration, NAMELEN shall be set to 32 or higher (whereas the default value is often only 8). This is essential because several of the generic identifiers in the MARTIF DTD are longer than 8 characters (see Figure 7).

Figure 7—SGML Declaration

```
<!SGML "ISO 8879:1986"

--
   MARTIF SGML declaration for local processing with SGMLS:
   extended capacity points (Namelen 32, Litlen 512)
   full ASCII character set instead of ISO/IEC 646 subset
--
CHARSET
BASESET  "ISO 646:1983//CHARSET
         International Reference Version (IRV)//ESC 2/5 4/0"
DESCSET          0      9      UNUSED
                 9      1       9
                10      1      10
                11      2      UNUSED
                13      1      13
                14     12      UNUSED
                26      1      UNUSED   -- eof
```

```
                    27      5       UNUSED
                    32      95      32
                    127     1       UNUSED
BASESET  "ISO Registration Number 100//CHARSET
        ECMA-94 Right Part of Latin Alphabet Nr. 1//ESC 2/13 4/1"
DESCSET         128     32      UNUSED
                160     95      32
                255     1       UNUSED

CAPACITY PUBLIC "ISO 8879:1986//CAPACITY Reference//EN"
SCOPE    DOCUMENT

SYNTAX
SHUNCHAR CONTROLS 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
              16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
              127 255
BASESET  "ISO 646:1983//CHARSET
        International Reference Version (IRV)//ESC 2/5 4/0"
DESCSET         0       128     0
FUNCTION        RE      13
                RS      10
                SPACE   32
        TAB   SEPCHAR    9
    --  EOF   SEPCHAR   26 --

NAMING          LCNMSTRT ""
                UCNMSTRT ""
                LCNMCHAR "-."
                UCNMCHAR "-."
                NAMECASE GENERAL YES
                ENTITY   NO
DELIM  GENERAL SGMLREF
       SHORTREF  SGMLREF
NAMES    SGMLREF
QUANTITY SGMLREF
       ENTLVL          20
       NAMELEN         32
       LITLEN          512
       TAGLVL          24
FEATURES
    MINIMIZE
        DATATAG         NO
        OMITTAG         YES
        RANK            NO
        SHORTTAG        YES

    LINK
        SIMPLE          NO
        IMPLICIT        NO
        EXPLICIT        NO
```

```
    OTHER
        CONCUR          NO
        SUBDOC          YES 10
        FORMAL          YES

APPINFO
    NONE
>
```

8.2.2 MARTIF framework

The MARTIF framework is found in Figure 9. The framework DTD declares that the overall structure of a MARTIF document shall consist of a header followed by a text (see the *martif* element declaration in Section 2 of Figure 9). The header shall provide general information about the document. The text shall consist of an optional front element, a required body element, and an optional back element (see text element declaration in Section 3 of Figure 9).

The framework DTD also declares that several low-level elements shall be used in the header, front, and body. The body shall consist of a sequence of terminological entries, such as the examples shown in this International Standard; however, these entries cannot form an SGML document by themselves.

NOTE – The framework component defines the macrostructure into which the entries fit, in analogy to the framework of a house that has only two inside supporting walls. The supporting walls divide the house into three major sections: a small "front", a large "body", and a small "back". Within this framework, the house can be remodelled to have various combinations of rooms in the body section. The low-level elements can be thought of as furniture and other fixtures. In fact, the framework component of the MARTIF DTD could be used for various types of documents. The MARTIF framework refers to two entities, mtf-body and mtf-ents. These entities are not defined in the framework DTD, but they are defined in two respective files that combine with the framework to form the complete DTD. It is critical that all these files be present on the system.

There are no system-specific identifiers in the DOCTYPE statement of the MARTIF DTD. The PUBLIC names are unique and their contents shall remain untouched, with the exception of the third component of the DTD, which can contain user-specified character entities.

8.2.3 MARTIF body

The mtf-body entity is referred to at the end of Section 3 in Figure 9 and its content is presented in Figure 10. This file defines the internal structure of the body element by declaring that the mtf-body entity shall provide the definition of the body component of a MARTIF document and that the body shall be composed of terminological data. This definition also provides the portion of the DTD that determines the structure of terminological entries. This file should not be modified because otherwise interchange can be seriously hindered.

8.2.4 MARTIF character entities

Unless otherwise indicated in the <encodingDesc> element of the header (which shall be cited as *Option 1* in this document), MARTIF documents shall use only those characters defined in ISO 646 and characters defined as character entities composed entirely of 646 characters (*Option 2)*. (For instance, the word *Maß* in the German <tig> shown in Example 3 contains the character *ß* (German *sharp s*), which is not contained in the ISO 646 subset. Consequently, this character is represented by the entity "*ß*", which describes this character as "*s z ligature*". Unless indicated for Option 1, all non-646 characters shall be represented with comparable character entities. Once the document has been safely transmitted to a target platform, the character entities can be automatically converted to a more convenient target-platform local representation.

In some cases, even the characters in ISO 646 are prone to corruption during transmission. In instances where interchange takes place over links not reliable for the full character set, such as character sets used in mainframe computer environments, the characters subject to misinterpretation and corruption shall be replaced by standard entities. The characters least susceptible to loss or misinterpretation in transit among systems are shown in Figure 8.

Figure 8—ISO 646 subset

a b c d e f g h i j k l m n o p q r s t u v w x y z
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
0 1 2 3 4 5 6 7 8 9
" % & ' ( ) * + , - . / : ; < = > ? _

NOTE – This set also includes the space character.

A MARTIF document can be represented using only the characters in Figure 8 plus character entities composed solely of characters from Figure 8. Of the characters shown in Figure 8, the only ISO/IEC 646 characters that are absolutely essential during transmission are the letters a-z (upper and lower case), the digits 0-9, and the punctuation symbols '&' (ampersand) and ';' (semi-colon). All other characters can then be defined using character entities. When ISO 646 characters from Figure 8 are temporarily represented as entities during transmission, however, they should be reconverted to ISO/IEC 646 characters before processing a MARTIF document using an SGML parser or other SGML-aware software.

Representing all non-ISO-646 characters as character entities allows a MARTIF document to be transmitted across any transmission path to any platform that supports ISO 646. When the MARTIF document has been received and parsed, the non-ISO-646 character entities are typically converted to a local representation for convenient viewing, editing, and processing.

The framework component of the DTD allows the user to specify the list of character entities that shall be used to represent characters in a MARTIF document instance. This specification is accomplished by allowing the user to modify the content of the text entity *mtf-ents* referenced in the framework (see Figure 9, Section 1). The text entity *mtf-ents* is a metafile

that references one or more sets of character entities, each set consisting of a text entity. The sample *mtf-ents* metafile shown in Figure 11 references a public text entity called *latin1.ents* and a user-defined text entity called *extra.ents*. The *latin1* character entities are insufficient for terminology work in non-latin-alphabet languages such as Russian and Greek and non-alphabetic languages such as Chinese, Japanese, and Korean (CJK). Users should update the content of *extra.ents* as needed in order to accommodate the languages used in the terminological entries of a particular MARTIF document instance.

Unless otherwise indicated in the <encodingDesc> as noted above for Option 1, the Basic Multilingual Plane of ISO/IEC 10646-1 (commonly known as UNICODE) shall be used for the value of character entities in *extra.ents*. As exemplified in Figure 11, a character entity definition includes a mnemonic entity name, an entity value of the form *&#xHHHH;* (where HHHH consists of the four hex digits comprising the UNICODE number for the character), and an optional comment to clarify the meaning of the mnemonic.

Sometimes it is desirable to avoid processing the extra.ents entity during conversions. An alternative procedure for specifying character entities is to use numeric character references as defined in ISO 8879. Numeric character references need not be declared in the DTD and can be automatically generated from a UNICODE number. Descriptions of numeric character references can be placed in a<refObjectList>where each <refObject> has an id consisting of a UNICODE number followed by a value of the *lang* attribute.

8.3 MARTIF header

The structure of the header is defined in the framework (see Section 2, Figure 9). The header provides for a standard way in which the origin of the terminology file shall be identified and in which comments about it shall be recorded that will be helpful to a terminologist or translator using the document later. The header is not necessarily processed automatically, except perhaps to format it for presentation to a human reader.

The framework DTD declares that the header shall consist of three top-level elements: a required file description, an optional encoding description, and an optional revision description. The file description (<fileDesc>) shall consist of an optional title statement (comprising the actual title followed by an indication of the person responsible for the file), an optional publication statement (comprising a series of paragraphs describing where this document was published), and a required source description (consisting of a series of paragraphs describing where the information in this document originated).

After the file description comes an optional encoding description (<encodingDesc>), which can consist of a series of paragraphs describing the coding conventions used in the document. Specifically, in any case where a writing system (designated by a value of the *lang* attribute) uses any method of encoding involving non-ISO-646 characters other than the character entities from ISO 8879:1986, Annex D or ISO/IEC 10646-1 entities, then that method shall be documented in this element.

An optional revision description (<revisionDesc>) can follow the encoding description (if there is any revision information to report). If used, it shall consist of a series of *change* elements, each of which comprises a series of paragraphs. Each *change* element shall describe a change or set of changes that has been made in the document.

8.4 MARTIF text

8.4.1 MARTIF Components

As illustrated in Figures 5 and 6 (see 8.1), the text of a MARTIF document shall consist of an optional <front>, the <body>, and an optional <back>.

8.4.2 MARTIF front

Example 10 (see 8.1) does not include an optional front element. If the front element does occur in a MARTIF document, it shall contain explanatory prose that provides background information concerning the terminological entries. Wherever possible, the terminological entries contained in the body should be understandable without reference to information in the front element, even if this requires duplication of certain information throughout the body. For example, each terminological entry should contain an indication of subject field (domain) information rather than expecting the user to obtain this information from the front matter. Thus, the terminological entries will be more self-contained and more easily merged with other entries after interchange.

8.4.3 MARTIF body

As previously mentioned, the content of the mtf-body entity (shown in Figure 10, 8.5) declares the structure that shall be followed by the terminological entries. The DTD fragment for the body begins with the following SGML statement:

<!ELEMENT body - - (termEntry+)>.

This statement defines the body of the document by declaring that it shall consist of one or more <termEntry> elements. The following commentary on the structure of a <termEntry> is an informal re-statement of the information given formally in the statements of the body DTD component.

A terminological entry (<termEntry>) shall consist of optional auxiliary elements (contained in the parameter entity *termAux*) followed by one or more terminological information groups. As noted in Clause 4, one <termEntry> should ideally document one concept within a specified subject field, and each term representing the concept shall be documented in a terminological information group (<tig> or <ntig>). Multiple <tig>s or <ntig>s in the same language shall be contained in <langSet>.

A <tig> shall be used when there are no explicit subgroupings within the terminological information group. For example, a <tig> can consist of a term, grammatical information (classified as <termNote>), a definition, a bibliographic reference, and an indication of responsibility for maintenance of the <tig>. In such a case, the term, grammar, definition, reference, and responsibility all reside on the same logical level as elements of the <tig>.

An <ntig> shall be used when it is desirable to represent a secondary level of grouping within the terminological information group. For example, it can occur that a note or reference applies only to a <descrip> or <admin> element and not to the entire terminological information

group. In such a case, a Group element can be used to group the note or reference element explicitly with the appropriate element.

Example 5 and Examples 6 and 7 (see 5.2.4) show a sample <tig> vs. an <ntig>, respectively.

When <ntig> is used, <termGrp> shall be used to group information about the term itself. Any number of <descripGrp> elements can be used, each of which contains one descriptive element and any pointers, references, and notes that apply to it, and any number of <adminGrp> elements can be used, each of which contains one administrative element and any pointers, references, and notes that apply to it.

The content of the <term>, <descrip>, <admin>, and <note> elements allow various degrees of internal structure for the representation of highlighted elements and foreign words. The content of <descrip> is the most flexible, since contextual examples are placed in <descrip> elements. However, <ptr>, <ref>, and <note> elements shall not be used in the content of <term>, <descrip>, and <admin>.

In the MARTIF DTD, the basic method for showing relatedness is to use explicit embedding at several levels within an entry:

- Elements shall be embedded within an entry (but before any terminological information group) if they apply to the entire entry.
- All terminological information groups related to essentially the same concept shall be included in a single <termEntry>. In the event of multiple terminological information groups in a given language, language sets shall be embedded within the entry, with the <tig>s and <ntig>s embedded within the language sets to ensure that information related to the same language remains together within the <termEntry>.
- <term> elements, <termNote> elements, <descrip> elements, and <admin> elements shall be embedded within terminological information groups in such a way as to illustrate that they are related to each other.
- If needed, notes, pointers, and references shall be nested within <termGrp>, <termNoteGrp>, <adminGrp>, and <descripGrp> elements to show that they are related to a <term>, <termNote>, <admin>, or <descrip> element but not to the entire terminological information group.

Pointers, references, and cross-references (<ptr>, <ref>, <xref>) shall be used when it is necessary to show relatedness to other term entries, other parts of the document in question, or, in the case of <xref>, to external documents or files (see 5.2.5).

In some cases, however, there is need for a further level of reference in addition to those accommodated by MARTIF's embedding features. For instance, in some unusual situations, there may be a note on a note, which actually happens in the German <tig> included in Example 7 (5.2.4). In fact, in this particular case, there are *two* additional levels of embedding, i.e., a note on a note on a note. Inasmuch as such instances are rare, it is not desirable to implement additional layers of embedding in the MARTIF DTD. As shown in the example, relatedness is expressed in the following manner:

- The note shall be identified with a unique *id* and embedded in the appropriate <...Grp> element.

- A <ref> element embedded in the same <...Grp> element shall be used to point to the note in question. The actual content of the <ref> element shall be the content of the secondary note. In this kind of situation, the <ref> element functions as a <ptr> showing relatedness, but it is a pointer with a note. This mechanism can be used to account for multiple layers of relatedness without implementing complex mechanisms that would be rarely used or running the risk of creating recursive loops, which could be the case if the DTD were to allow <note> to be embedded inside a <note> itself.

The %AuxInfo entity consists of a sequence of any number of descriptive elements, pointers, references, notes, and administrative elements. This auxiliary information can appear in a <termEntry> before the first <tig>, in an <ntig> before the <termGrp>, or in a <tig> after the <term> and <termNote> elements. Auxiliary information applies to the entire enclosing element (the <termEntry> or <ntig>), rather than to the particular enclosed element following it. Thus, for example, a note can appear in several positions: as the first element of a <termEntry> (when it shall apply to the whole <termEntry>), as the first element of an <ntig> or any main element of a <tig> (when it shall apply to an entire terminological information group), as part of the content of a <descrip> (when it shall apply only to the <descrip>), or as part of a <termGrp>, <termNoteGrp>, <descripGrp>, or <adminGrp> (when it shall apply only to that group).

The framework and body components of the MARTIF DTD indicate what shall be the content of the various elements of a terminological entry. For example, the framework component defines the entities bText (basic text), nText (note text), and dText (descriptive text), which shall be used in the body.

8.4.4 MARTIF back

8.4.4.1 General requirements

The back element in general SGML documents can accommodate such common document features as indexes and annexes. In MARTIF, bibliographic entries and cross-references (with the exception of those between individual terminological entries) should usually be placed in the back element. Cross-references can include, among other items, references to responsibility identifiers, to nontextual illustrations as described in A.5.5 of Annex A, World Wide Web namespace identifiers (URLs and FPIs), or references to frequently cited text chunks and frequently referenced information such as concept system layouts.

Different types of information included in the back matter should be sorted according to type and listed together in <refObjectList>s identified according to the value of the attribute *type*. Annex B of this International Standard provides information on the representation of bibliographical information. Other types of information shall be treated as follows:

Each type of back-matter information shall be introduced by the GI <refObjectList>, which can be differentiated using the *type*= attribute, e.g., <refObjectList type= 'URL'>, <refObjectList type='video'>,etc., (see Annex A, A.11.4.1 for additional options). Each individual entry within a <refObjectList> shall be introduced by the GI <refObject>, which inherits its type from the <refObjectList> in which it appears. Each individual data item included in a <refObject> shall be introduced by the <item> GI. A <refObject> can include an unlimited number of <item> elements. The <itemGrp> element shall be used to cluster a given <item> with related <note>, <ptr>, and <ref> elements.

8.4.4.2 Bibliographic references

As noted in 5.2.4, there are three different ways to treat bibliographic information in a MARTIF document.

- All information occurs in the <termEntry> itself. This procedure is followed in some databases, but it poses the risk of redundancy, which in turn is a source of error and cost as a result of increased effort devoted to information management.
- If the full bibliographic entry is included in the back element, <ptr> or <ref> elements shall be used to link the term entry with the respective material in the back matter. The entire block of bibliographic information shall be introduced by <refObjectList type='bibl'>, and each bibliographic entry shall be introduced by the <refObject> GI. The individual bibliographic data categories shall be encoded using the <item> or the <itemGrp> GIs together with the attribute *type*. These data categories correspond to data categories specified in ISO 12083. The <itemSet> GI is used where ISO 12083 embeds multiple items inside other items. Example E.1 in Annex E, lines 131-132, 138-142, and 152-156, contain samples of this type of encoding. The GI <itemGrp> can also be used to contain a single <item> plus a <note>, <ptr>, or <ref>.
- If bibliographic information is contained in an external document or documents that are encoded in conformance with the DTD specified in ISO 12083, the <ptr> and <ref> elements shall be used to link the term entry with <xref> references included in the back element. These elements occur inside <itemGrp> elements as illustrated in Example 10 (see 8.1). They point to the respective external document(s).

8.4.4.3 Cross references

If a long contextual example or other piece of data is used several times in the body, it can be placed in the back element and referenced with a <ptr> or <ref> element from many different terminological information groups in order to avoid unnecessary duplication of data. This option applies particularly for the following types of data:

- Nontextual illustrations (see 8.4.4.4)
- External references from textual material (see 8.4.4.5)
- Namespace identifiers (see 8.4.4.6)

8.4.4.4 Nontextual illustrations

The back matter can also contain <xref> elements that point to other external files or documents, such as bit-mapped graphical images or other foreign, nontext, nonSGML data meant to be viewed with specialized software. Such materials can be linked to an entry in the body by using a <ref> element that points to an <xref> in the back, which in turn points to the external file, or they can be "bundle" and included in the back matter. This means that the data have been encoded to consist entirely of ISO 646:1983 characters and placed in an item in <back>. Of course, several entries can refer to the same foreign illustrative data item. Such items can include, for instance, spreadsheets, other databases, statistical models, virtual reality files, flight simulations, etc. Reference to these items can be entered at either the <tig> (<ntig>) or <termEntry> level.

8.4.4.5 External references from textual material

Sometimes a term entry can include an entailed term that references an external glossary where the term is defined. In such a case, the <hi> GI can be used as a pointer to an <xref> in the back matter.

EXAMPLE 11: Back-matter representation

```
... 
<descripGrp>
    <descrip type='explanation'> This is a <hi type='entailed Term'
    target='protein'>protein</hi> molecule.</descrip>
    <ref type='sourceIdentifier' target='GDB-protein'>protein</ref>
</descripGrp>
...
<back>

    <refObjectList type='relatedTermbase'>
        <refObject id='GDB-proteinLinks'>
            <itemGrp>
                <item id='protein'><xref target='gdbdir/protein.sgm'></xref></item>
            </itemGrp>
            <itemGrp>
                <item id='amino_acid'>
                <xref target='amino.acid.sgm'></xref>
                </item>
            </itemGrp>
... [other links to entries in 'GDB-protein']
        </refObject>
    </refObjectList>

    <refObjectList type='bibl'>
        <refObject id='GDB-protein'>
            <item type='title'>GDB-protein Glossary</item>
                <item type='author'>Mike P. Biologist</item>
                <item type='publisher'> etc. </item>
        </refObject>
    </refObjectList>
</back>
```

8.4.4.6 Namespace identifiers

Namespace identifiers are used to retrieve resources in the World Wide Web environment. Uniform Resource Locators (URLs) are unique character strings used to address files and servers. Formal Public Identifiers (FPIs) are unique identifiers for a representative of a given document. Both these identifiers constitute a kind of special bibliographical citation and serve as active cross-references. They have the potential to act in very different ways from normal citations, however, especially if the source database was configured for HTML and the URLs or FPIs are active links. The reference to a namespace identifier appears in a term entry in the body and contains the *anchor* for the identifier, which usually acts as a hypertext button in its source database. The actual links associated with the identifiers shall be compiled in the back matter using <refObjectList> with either the type='namespaceID' (for mixed lists), 'URL', or 'FPI'.

Example 12: Namespace identifiers

```
<termEntry id='prot32098'>
    <ntig lang='en'>
        <termGrp><term>zipper</term>
        <termNote type='partOfSpeech'>noun</termNote></termGrp>
        <descripGrp><descrip type='definition'>super secondary structures of <hi type='URL'
        target='url34234'>proteins</hi>that look like zippers and can unzip and reform and that
        exhibit a type of coiled structure</descrip></descripGrp>
    </ntig>
</termEntry>

<back>
    <refObjectList type='URL'>
        <refObject id='url34234'>
            <itemGrp><item>http://cc.oulu.fi/~aiivanaai/cc.html></item>
            <note>cf. PPS Glossary at the University of Oulu, Finland</note>
            </itemGrp>
        </refObject>
    </refObjectList>
</back>
```

8.4.4.7 Responsibility references

Terminology databases document responsibility for data collection and maintenance based on three primary data categories: the type of terminology management transaction involved (see Annex A, A.10.1), the date (Annex A, A.10.2.1), and the person responsible for the transaction (Annex A, A.10.2.2). Annex A provides options for documenting this information, depending on the way the original database models this data.

Many databases can include internal or external entries documenting the individual persons responsible for creating and maintaining the database. Responsibility references can consist of pointers to these entries. Other databases do not necessarily include such entries, but do use undeclared responsibility codes or references. For purposes of exchange, any existing responsibility references shall be compiled in a list and placed in the back matter. If the database contains no separate responsibility entries, but does contain responsibility notation, the export routine shall extract this information based on the existing responsibility data items, assemble them into an appropriately coded <refObjectList>, and deposit this information in the back matter. Obviously, a generated list cannot include any information other than that provided by the existing data.

EXAMPLE 13: Responsibility entry

```
<refObjectList type='person'>
    <refObject id='sew'>
        <item type='name'>Sarah Elaine Wiggens</item>
        <item type='jobTitle'>chief terminologist</item>
        <item type='authorizationCode'>system operator</item>
    </refObject>
    <refObject id='mpp'>
        <item type='name'>Maria Petra Pisana</item>
        <item type='jobTitle'>Italian terminologist</item>
        <item type='authorizationCode'>user</item>
    </refObject>
</refObjectList>
```

Given the existence of a responsibility list in the back matter, the three components of the responsibility notation can be accommodated as follows:

EXAMPLE 14: Responsibility references

```
<ntig lang=en>
    <termGrp>
        <term>MARTIF</term>
        <date type='origination'>1995-11-28</date>
        <ptr type='originator' target='sew'>
    </termGrp>
    <descripGrp>
        <descrip type='definition'>[A definition of MARTIF]</descrip>
        <date type='update'>1993-07-25</date>
```

```
10          <ptr type='updater' target='mpp'>
11      </descripGrp>
12 </ntig>
```

8.5 Validation

Before transmitting a MARTIF file, the file should be validated using an SGML parser or some other SGML-aware software. Before a file can be parsed, it shall be reconfigured as a complete SGML document.

The MARTIF DTD shown in Figures 9-11 is completely self-contained and has been used to successfully parse the sample MARTIF documents, i.e., Example 10 (see 8.1) and Example E.1 shown in Annex E. These three parts of the DTD could have been placed in one file, but they have been kept as three files in order to exemplify the modularity of the DTD. This facilitates user addition of character entities. It also separates the body, which defines the structure of concept-oriented terminological entries, called <termEntry>s in a MARTIF document, from the framework portions of the DTD, which might also apply to other kinds of documents that consist of a header, optional front matter, a body, and back matter, but with a different structure inside the body.

Figure 9—The MARTIF framework DTD fragment
"ISO 12200: 1999/DTD for MARTIF (framework)"

```
<!--
OVERALL ORGANIZATION OF COMPLETE MARTIF DTD (framework and body):

Section 1: Building-block elements for MARTIF (entities and elements)

Section 2: High-level elements, including Header

Section 3: The text (front, body, and back) (NOTE: the internal structure
of the body element is not given here, see section 5)

Section 4: attributes (elements with same attributes are grouped)

(Section 5): the MARTIF body, i.e., the content of the body element in the
text element, is given in a separate file (mtf-body.DTD)
-->

<!--  ============ Section 1: Building Blocks ============  -->

<!--  GLOBAL ENTITIES  -->

<!-- Basic text (for restricted use, such as terms)  -->
<!ENTITY %  bText    '(#PCDATA | hi)*'  >

<!-- Text for notes (no recursion of note, allow foreign text)  -->
<!ENTITY %  nText    '(#PCDATA | hi | foreign)*'  >

<!-- Text for descrip elements (allow embedded segments) -->
<!ENTITY %  dText    '(#PCDATA | hi | foreign | s )*'  >
```

```
<!--  ===== GLOBAL ATTRIBUTES =====  -->

<!-- language is a two or three character code that designates
     a language as represented by a certain writing system -->

<!ENTITY %  a.global 'id   ID #IMPLIED
            lang  CDATA #IMPLIED'  >

<!ENTITY %  ta.global   '%a.global
            TYPE  CDATA #IMPLIED'  >

<!--  ===== character entity set =====  -->

<!-- contents may be modified by user according to languages used -->

%mtf-ents;

<!--  ===== LOW-LEVEL ELEMENTS =====  -->

<!--  Elements used inside stretches of text -->

<!ELEMENT   hi          - -   (#PCDATA) >
<!ELEMENT   foreign     - -   (%bText;)  >
<!ELEMENT   s           - -   (%nText;)  >

<!-- Elements used throughout MARTIF -->

<!ELEMENT   note        - -  (%nText;)  >
<!ELEMENT   date        - -  (#PCDATA)  >

<!ELEMENT   ref         - -  (#PCDATA)  >
<!-- Note: ptr is the only empty element  -->
<!ELEMENT   ptr         - o  EMPTY  >

<!-- Elements used only in header, front, and back elements, not body  -->

<!-- Note: p starts a paragraph; it need not have an end tag -->
<!ELEMENT p             - o  (%dText;) >

<!ELEMENT name          - -  (%dText;) >

<!ELEMENT refObjectList - -  ( (refObject)+ ) >
<!ELEMENT refObject     - -  ((itemSet | itemGrp | item
                             | ptr | ref | xref | note | date)+ ) >
<!ELEMENT   item        - -  (xref | %dText)* >
<!ELEMENT itemGrp       - -  (item, (ptr | ref | xref | note | date)*)  >
<!ELEMENT itemSet       - -  ((itemGrp | item)+) >

<!-- Reference to an object outside the document (use is discouraged) -->
<!ELEMENT   xref        - -  (#PCDATA)  >

<!-- ========== Section 2: High Level Elements ========== -->

<!-- NOTE:  Document (MARTIF) consists of header and text.
Text consists of optional front, required body (which is in
the case of MARTIF a sequence of entries), and optional back
(for bibliographical and graphics references)  -->

<!ELEMENT   martif      - -   (martifHeader, text)  >


<!-- *** Header dtd component is embedded here ***  -->
```

```
<!ELEMENT   martifHeader      - -
               (fileDesc, encodingDesc?,
               revisionDesc?)  >
<!ELEMENT   fileDesc          - -   (titleStmt?, publicationStmt?,
               sourceDesc+)  >
<!ELEMENT   titleStmt         - o   (title, resp*)  >
<!ELEMENT   title             - -   (%dText;)  >
<!ELEMENT   resp              - o   ((role & name)+)  >
<!ELEMENT   role              - o   (%dText;)  >
<!ELEMENT   publicationStmt   - o   (p+)  >
<!ELEMENT   ( sourceDesc | encodingDesc | change ) - -   (p+)  >
<!ELEMENT   revisionDesc      - -   (change+)  >

<!-- ===== Section 3: structure of text element ============== -->

<!ELEMENT   text              - -   (front?, body, back?)  >
<!ELEMENT   front             - o   (p | note)*  >
<!ELEMENT   back              - o   ((refObjectList)*) >

<!-- INCLUDE body declaration (this is what distinguishes
MARTIF files from another text type that has a similar header)  -->

<!-- body contains concept entries, each enclosed by a termEntry GI -->

%mtf-body;

<!-- ============ Section 4: Attribute Lists ========== -->

<!ATTLIST   (note | fileDesc | titleStmt |
      martif | title | resp | role | publicationStmt |
      sourceDesc | encodingDesc | revisionDesc | change |
      text | front | back )
            %a.global;           >

<!ATTLIST (date | p | s | item | itemGrp | itemSet)
                  %ta.global;  >

<!ATTLIST foreign                id ID #IMPLIED
                                 lang CDATA #REQUIRED >

<!ATTLIST   hi    %a.global;
            type   CDATA         #IMPLIED
            target IDREF         #IMPLIED  >

<!ATTLIST   name     %a.global;
            type   CDATA         #IMPLIED
            target IDREF         #IMPLIED  >

<!ATTLIST   ( refObjectList | refObject | martifHeader )
            %ta.global;  >

<!ATTLIST   ptr      id ID       #IMPLIED
                                 type CDATA #REQUIRED
                                 target IDREF #REQUIRED >

<!ATTLIST   ref      %a.global;
                               type CDATA #REQUIRED
                               target IDREF #REQUIRED >

<!ATTLIST   xref     %ta.global;
            target   CDATA       #IMPLIED  >
```

[Conclusion of
Figure 9—The MARTIF framework DTD fragment
"ISO 12200: 1999/DTD for MARTIF (framework)"]

Figure 10—The MARTIF body DTD fragment
"ISO 12200:1999/DTD for MARTIF (body)"

```
<!--  *****  MARTIF BODY DTD *****  -->
<!--  *****  Defines the body element of the MARTIF DTD **** -->

<!ENTITY %     AuxInfo       'descrip | descripGrp | admin | adminGrp |
                             ptr | ref | date | note'  >

<!ELEMENT body           - -  (termEntry+)  >

<!-- termEntry = one concept entry: ideally, one concept, one entry -->
<!ELEMENT termEntry      - -  ((%AuxInfo;)*, (langSet | tig | ntig)+) >
<!ATTLIST termEntry      %a.global;
                         type CDATA          #IMPLIED  >

<!-- langSet = cluster of terms in one language plus associated info -->
<!ELEMENT langSet        - -  ((%AuxInfo;)*, (tig | ntig)+) >
<!ATTLIST langSet        %a.global;
                         type CDATA          #IMPLIED  >

<!-- tig='terminological information group, flat' -->
<!ELEMENT tig            - -  (term, (termNote)*,
                         (descrip | admin | ptr | ref | date | note)*)  >
<!ATTLIST tig            id   ID             #IMPLIED
                         lang CDATA          #IMPLIED >

<!-- ntig ='terminological information group, nested'  -->
<!ELEMENT ntig           - -  (termGrp,
                              (%AuxInfo;)*) >
<!ATTLIST ntig           id   ID             #IMPLIED
                         lang CDATA          #IMPLIED >

<!ELEMENT term           - -  (%bText;)  >
<!ATTLIST term           %a.global       >

<!ELEMENT termGrp        - -  (term, (termNote | termNoteGrp |
                         ptr | ref | date | note)* )  >
<!ATTLIST termGrp        %a.global; >

<!ELEMENT termNoteGrp    - -  (termNote,
                         (ptr | ref | date | note)* )  >
<!ATTLIST termNoteGrp    %a.global; >

<!ELEMENT descripGrp     - -  (descrip,
                         (ptr | ref | date | descripNote | note)* )  >
<!ATTLIST descripGrp     %a.global;              >

<!ELEMENT adminGrp       - -  (admin,
                         (ptr | ref | date | adminNote | note)* )  >
<!ATTLIST adminGrp       %a.global;      >
```

```
<!ELEMENT descrip        - -  (%dText;)  >
<!ATTLIST descrip        %a.global;
                         type CDATA          #REQUIRED >

<!ELEMENT admin          - -  (%bText;)  >
<!ATTLIST admin          %a.global;
                         type CDATA          #REQUIRED >

<!ELEMENT termNote       - -  (%nText;)  >
<!ATTLIST termNote       %a.global;
                         type CDATA          #REQUIRED >

<!ELEMENT descripNote    - -  (%nText;)  >
<!ATTLIST descripNote    %a.global;
                         type CDATA          #REQUIRED >

<!ELEMENT adminNote      - -  (%nText;)  >
<!ATTLIST adminNote      %a.global;
                         type CDATA          #REQUIRED >
```

[Conclusion of:
Figure 10—The MARTIF body DTD fragment
"ISO 12200:1999/DTD for MARTIF(body)"]

Figure 11—A sample MARTIF character entity DTD fragment
"ISO 12200:1999/ENTITIES for MARTIF (sets)"

```
<!-- metafile of character entity sets************************  -->

<!-- user-defined character entities**********  -->

<!ENTITY % extra.ents SYSTEM "EXTRA.ENT">
%extra.ents;


<!-- standard set of latin character entities*****************  -->

<!ENTITY % latin1.ents PUBLIC
     "ISO 8879-1986//ENTITIES Added Latin 1//EN"
     "ISOLAT1.ENT">
%latin1.ents;
```

Sample contents for the text entity extra.ents (*Option 2, per 8.2*):

```
<!ENTITY bull     "&amp;#x2022;" --=round bullet, filled -->
<!ENTITY mdash    "&amp;#x2014;" --=em dash -->
<!ENTITY hellip   "&amp;#x2026;" --=ellipsis (horizontal) -->
<!ENTITY amp      "&"         --=true ampersand vs. start entity -->
<!ENTITY emsp     "&amp;#x2003;" --=em space -->
<!ENTITY ensp     "&amp;#x2002;" --=en space -->
<!ENTITY laquo    "&amp;#x00AB;" --=left angle quote -->
<!ENTITY raquo    "&amp;#x00BB;" --=right angle quote -->
<!ENTITY lsquo    "&amp;#x2018;" --=single quotation mark, left -->
<!ENTITY rsquo    "&amp;#x2019;" --=single quotation mark, right -->
<!ENTITY ldquo    "&amp;#x201C;" --=double quotation mark, left -->
<!ENTITY rdquo    "&amp;#x201D;" --=double quotation mark, right -->
<!ENTITY udquo    "&amp;#x0022;" --=undifferentiated double quote mark -
                  ->
<!ENTITY usquo    "&amp;#x0027;" --=undif. sing. quote mark/apostrophe -
                  ->
<!ENTITY shy      "&amp;#x00AD;" --=soft hyphen -->
<!ENTITY lt       "&amp;#x003C;" --=less than vs. start tag -->
<!ENTITY gt       "&amp;#x003E;" --=greater than vs. end tag -->
<!ENTITY SIGMA    "&amp;#x03A3;" --=GREEK CAPITAL LETTER SIGMA -->
<!ENTITY YAcy     "&amp;#x042F;" --=CYRILLIC CAPITAL LETTER YA, -->
```

[Conclusion of:
Figure 11—The MARTIF character entities DTD fragment
"ISO 12200:1999//ENTITIES for MARTIF (sets)"]

Annex A
(normative)

Normalized data category representation

Terminology interchange as defined in this International Standard requires the use of normalized data categories as represented by forms listed in the following charts. As different database environments use different names to identify data categories, these elements shall be replaced with the normalized forms for the purpose of data interchange. The reassignment of names to data categories shall be based on the definitions and specifications listed in ISO 12620.

Table A.1 Data category classification

Primary data category groups	Description of the data categories in each subgroup
Group 1: Terms and term-related data categories	
Subgroup 1	Treats the terms that occur in terminology databases. NOTE – The content of this data category is always a term or other information treated as if it were a term (phraseological units and standard text). Source data that specify additional information about terms (such as a term's status as a synonym, abbreviation, etc.) shall be converted to report the term simply as a <term>, and the additional information shall be incorporated into an appropriate <termNote>.
Subgroup 2	Treats data categories that provide term-related information. NOTE – These categories shall be represented by <termNote type='. . .'> where the content of '. . .' is a data category name expressed as a value of the *type* attribute. The content of the data category itself is a permissible instance (not a term) as indicated in the following charts. The decision to represent these data categories in this way represents the need to opt for a single data representation mode within the MARTIF standard (see Annex D, Data Modeling Variance). EXCEPTIONS: Some data categories such as *homograph* can be represented using <ptr> or <ref> to link to another terminological entry or to material in the back matter.

Table A.1 Data category classification

Primary data category groups	Description of the data categories in each subgroup
Subgroup 3	Treats data categories that relate to equivalence between or among terms in different languages assigned to the same or very similar concepts and usually appearing in the same <termEntry>. These data categories document term-concept relations. NOTE – Unless otherwise indicated in Annexes A and C, these categories shall be represented by <termNote type='...'> where the content of '...' is a data category name expressed as a value of the *type* attribute.
Group 2: Data categories related to concept description	
Subgroup 4	Treats data categories having to do with the classification of concepts into subject fields and subfields, along with other classification-related information. NOTE – Unless otherwise indicated in Annexes A and C, these categories shall be represented by <descrip type='...'> where the content of '...' is a data category name expressed as a value of the *type* attribute.
Subgroup 5	Treats data categories that provide concept-related description, i.e., different kinds of definitions, explanations and contextual material provided to define or otherwise determine the subject field and concept to which a term is assigned. NOTE – Unless otherwise indicated in Annexes A and C, these categories shall be represented by <descrip type='...'> where the content of '. . .' is a data category name expressed as a value of the *type* attribute. EXCEPTION — Some data categories can be represented using <ptr> or <ref> to link to external files such as those listed A.5.5, e.g., figure, audio, video, table, etc.
Subgroup 6	Treats data categories that indicate concept relations between pairs of concepts. NOTE – These categories shall be represented by <descrip type='...'> where the content of '...' is a data category name expressed as a value of the *type* attribute.

Table A.1 Data category classification

Primary data category groups	Description of the data categories in each subgroup
Subgroup 7	Treats data categories that are used to illustrate conceptual structures in concept systems. Such notation can be accompanied by a pointer or reference to a representation of the full concept system either contained in the back matter or referenced by <xref> to an external resource. NOTE – These categories shall be represented by <descrip type='...'> or by <ptr type='...'> where the content of '...' is a data category name expressed as a value of the *type* attribute.
Subgroup 8	Shall consist of the data category *note*, represented by the <note> GI.
Group 3: Administrative data categories	
Subgroup 9	Treats data categories used in the creation of documentation languages and thesauri. NOTE – These categories can be represented by <admin type='...'> where the content of '...' is a data category name expressed as a value of the *type* attribute and the target points to another location in the document that includes or references the descriptor in question. They can also be represented by <ptr type='...'> where the content of '...' is a data category name expressed as a value of the *type* attribute. The value of these items is a descriptor.
Subgroup 10	Treats data categories used to identify all other strictly administrative information. NOTE – See the charts for specific representation, although most of these categories shall be represented by <admin type='...'> where the content of '...' is a data category name expressed as a value of the *type* attribute. Considerable variation occurs in this group.

Table A.1 Data category classification

Primary data category groups	Description of the data categories in each subgroup
Function-related markup categories The following data categories are specific to the MARTIF environment and are not treated in ISO 12620.	
Subgroup 11	Treats MARTIF group GIs, including data categories that record specific information related to the way that information is organized or the way it functions inside terminology databases.
Subgroup 12	Treats cross-reference data categories (links) commonly used in terminology databases. These data categories serve as values of the attribute *type* following the <ptr> and <ref> GIs. All instances of <ptr> should be considered optional for <ref> if it is desirable to include content in the linking element. Linking functions are generally (but not always) implicit, metainformation in many database structures, but must be represented as explicit links for interchange purposes. Theoretically, and in actual practice in some database environments, any data category can be used to form a link. This chart references some categories that frequently function as links, but that appear elsewhere in these charts. See also 5.2.4 for additional information on the function of links within MARTIF and Annex C for lists of data categories that can use <ptr> and <ref>.

Table A.1 Data Category Classification

Primary data category groups	Description of the data categories in each subgroup
Bibliographic data categories (see also ISO 12083)	
Bibliographic data categories	Data categories associated with the elements listed in ISO 12083 that can commonly occur in terminology database environments. See Annex B.

Table A.2 Interpretation for Table A.3

Column heading	Abbreviation	Explanation
Position No.		Indicates the classification position (notation) for a given data category from ISO 12620.
Data category Name		Name assigned to a data category in ISO 12620
MARTIF representation		Data category representation specified for use in MARTIF
Value		Content of the data category (e.g., the content of the data category “term” consists of a *term*; “topTerm” consists of a *descriptor*)
	TC (Tag Components)	Tags (in this context, as expressed as full forms of data category names in MARTIF) frequently consist of three components: a GI, an attribute (Attrib), and a value of the attribute.
	GI	Generic identifier (e.g., see A.1, < term >); used when the GI alone shall represent the data category, e.g., < term > , < note > . Indicated in the Value column as: TC = GI.
	Attrib	Attribute (e.g., see item No. A.10.7, *lang*); used when the attribute alone shall represent the data category. Indicated in the Value column as: TC = Attrib
	[A value]	Value of the attribute *type* (e.g., type = 'dataCategory') The vast majority of items in the following tables appear as values of the attribute *type*, consequently 'value' is to be considered the default throughout the list and is not indicated in the charts.

Table A.2 Interpretation for Table A.3

Column heading	Abbreviation	Explanation
Examples		Model instance of a complete data category representation in MARTIF (Wherever possible, examples used in these charts are based on examples used in ISO 12620. The examples shown in the charts only illustrate the behavior of data categories and groups of data categories. ISO 12620 provides definitions and other detailed information on individual data categories.)

Table A.3 MARTIF data category representation
Group 1: Terms and term-related data categories
Subgroup 1: Term; Subgroup 2: Term-related information

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.1	term	< term >	A term TC = GI	< term > serializer < /term > All terms are treated as coequal within the concept-oriented terminological entry. Special attributes of terms are encoded using the < termNote type = '…' > .
A.2	term-related information	< termNote type = '…' >		
A.2.1	term type	< termNote type = 'termType' >	Perm. instances	All data categories listed between A.2.1 and A.2.1.9 exhibit the following behavior: <termGrp> <term>parallel serial converter</term> <termNote type='termType'>synonym<termNote> </termGrp> Since the data categories listed here are not necessarily mutually exclusive, more than one<termNote type='...'>can be used in any given<termGrp>. <termGrp><term>radar</term> <termNote type='termType'>main entry term</termNote> <termNote type='termType'>acronym</termNote> </termGrp> If quasi-synonyms are documented in separate <termEntry>s, they can be linked with <ptr> or <ref>: <termGrp><term>domain</term><ptr type='quasiSynonym' target='ID5345'> </termGrp> where 'ID5345' is the identifier for a <termEntry> documenting the term *subject field.*
A.2.1.1	main entry term	< termNote type = 'termType' > main entry term < /termNote >		
A.2.1.2	synonym	< termNote type = 'termType' > synonym < /termNote >		
A.2.1.3	quasi-synonym	< termNote type = 'termType' > quasi-synonym < /termNote >		
A.2.1.4	international scientific term	< termNote type = 'termType' > international scientific term < /termNote >		
A.2.1.5	common name	< termNote type = 'termType' > common name < /termNote >		
A.2.1.6	internationalism	< termNote type = 'termType' > internationalism < /termNote >		

Table A.3 MARTIF data category representation
Group 1: Terms and term-related data categories
Subgroup 2: Term-related information, cont. 2

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.2.1.7	full form	<termNote type='termType'>full form</termNote>	Perm. instance	<termGrp><term>Organization for Standardization</term><termNote type='termType'>full form</termNote></termGrp>
A.2.1.8	abbreviated form of term	<termNote type='termType'>abbreviated form</termNote>	Perm. instances	Note: only used if no finer degree of granularity is available in an interchange situation
A.2.1.8.1	abbreviation	<termNote type='termType'>abbreviation </termNote>	Perm. instances	All data categories listed under A.2.1.8.1-A.2.1.8.5 follow the general format:: <termGrp><term>BSE</term><termNote type='termType'> acronym</termNote></termGrp>
A.2.1.8.2	short form of term	<termNote type='termType'>short form</termNote>		
A.2.1.8.3	initialism	<termNote type='termType'>initialism </termNote>		
A.2.1.8.4	acronym	<termNote type='termType'>acronym </termNote>		
A.2.1.8.5	clipped term	<termNote type='termType'>clipped term</termNote>		
A.2.1.9	variant	<termNote type='termType'>variant </termNote> or: <termNote type='termType'>variant </termNote><ptr type='variant' target='...'> <ptr type='variant' target='...'> or <ptr type='variant' target='...'> Where the value of the target is identical to the id of the referenced term.	Perm. instances	<ntig><term id='id7235a'>program</term></ntig> <ntig> <termGrp><term>programme</term><termNote type='termType'>variant</termNote><ptr type='variant' target='id7235a'></termGrp> </ntig>

Table A.3 MARTIF data category representation
Group 1: Terms and term-related data categories
Subgroup 2: Term-related information, cont. 3

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.2.1.10	transliterated form	<termNote type='termType'>transliterated form </termNote> Or as noted in A.2.1.9.	Perm. instances	For the Russian term: окружающая среда (English: *environment*): <tig lang=ru1><term id='id6371'> окружаю&sheh;ая с&recy;еда</term></tig> <ntig lang=ru2><termgrp><term>okruzhayushchaya sreda</term> <ptr type='transliteratedForm' target='id6371'></termGrp></ntig> Where 'ru1' references a writing system declaration (WSD) for the standard cyrillic SGML entities and 'ru2' references a WSD for BSI ru transliteration.
A.2.1.11	transcribed form	<termNote type=termType'>transcribed form </termNote> Or as noted in A.2.1.9.	Perm. instances	(Russian transcribed form for the Japanese term 台風 , たいふう (English: *typhoon*, Russian: тайфун)) <tig lang=ja1><term id='id7889'>&#xtai; &#xhuu;</term> </tig> <ntig lang=ja5><termGrp><term> таифун</term><ptr type='transcribedForm' target='id7889'></termGrp></ntig> Where 'ja1' references a WSD for Japanese represented using SGML-UNICODE entities (&#x53FO; and 風) and 'ja5' references a WSD for Russian transliteration of Japanese using the Russian SGML entities.
A.2.1.12	romanized form	<termNote type='termType'>romanized form </termNote> Or as noted in A.2.1.9.	Perm. instances	<tig lang=ja1><term id='id3567'>&#xtai; &#xhuu;</term> </tig> <ntig lang=ja3><termGrp><term>taihuu</term><ptr type='romanizedForm' target='id3567'></termGrp></ntig> Where 'ja1' references a WSD for Japanese represented using SGML-Unicode entities and 'ja3' references one of possibly several WSDs for Roman character assignments to Japanese characters.

Table A.3 MARTIF data category representation
Group 1: Terms and term-related data categories
Subgroup 2: Term-related information, cont. 4

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.2.1.13	symbol	<termNote type='termType'>symbol </termNote> or: <ptr type='symbol' target='id34537'> Where the content of *target* is the id for an entry in the back matter that contains a bundled graphics image or that points to an external graphics file.	Perm. instances	Where the symbol § is documented: <termGrp> <term>§</term> <termNote type='termType'>symbol</termNote> <termGrp> Symbols shall exist as entities in a standard ISO character entity file and be referenced as such or be referenced by pointing to an entity that expands to a graphic image properly bundled as binary data in the back matter or identified as an external reference.
A.2.1.14	formula	<termNote type='termType'>formula </termNote> or as noted in 2.1.13	Perm. instances	For the formula H_2O: <termGrp><term>H&sub2;O</term> <termNote type='termType'>formula</termNote></termGrp>
A.2.1.15	equation	<termNote type='termType'>equation </termNote> or as noted in 2.1.13	Perm. instances	For the equation $E=mc^2$: <termGrp><term>E=mc&2super;</term> <termNote type='termType'>equation</termNote></termGrp>
A.2.1.16	logical expression	<termNote type='termType'>logical expression</termNote> or as noted in 2.1.13	Perm. instances	<termGrp><term>x NOT y</term><termNote type='termType'>logical expression</termNote><termGrp>
A.2.1.17	materials management categories		Perm. instances	
A.2.1.17.1	sku (stockkeeping unit)	<termNote type='termType'>sku</termNote>	Perm. instances	For the sku #5193-6 : <tig lang=en><term>plaid flannel pants</term></tig> <ntig lang=en><termGrp><term>£5193-6</term><termNote type='termType'>sku</termNote>/termGrp></ntig>

Table A.3 MARTIF data category representation
Group 1: Terms and term-related data categories
Subgroup 2: Term-related information, cont. 5

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.2.1.17.2	part number	<termNote type='termType'>part number</termNote>	Perm. instances	<tig lang=en><term>clutch cover</term></tig> <ntig lang=en><termGrp><term>1 110 036 00 a</term><termNote type='termType'>part number</termNote></termGrp></ntig>
A.2.1.18	phraseological unit	<termNote type='termType'>phraseological unit</termNote>	Perm. instance	Note: only used if no finer degree of granularity is possible
A.2.1.18.1	collocation	<termNote type='termType'>collocation </termNote>	Perm. instance	<termGrp><term>immunization against measles</term> <termNote type='termType'>collocation</termNote></termGrp> Note: Collocations are also very frequently treated as contextual material, in which case they function as descriptive information. In interchange between databases that represent collocations in this way, the following markup could be used: <ntig><term>immunization</term> <descrip type='collocation'>immunization against measles</descrip></ntig>
A.2.1.18.2	set-phrase	<termNote type='termType'>set phrase</termNote>	Perm. instance	<termGrp><term>patent pending</term> <termNote type='termType'>set phrase</termNote></termGrp> Note: Set phrases are also very frequently treated as contextual material, in which case they function as descriptive information. In interchange between databases that represent set phrases in this way, the following markup could be used: <ntig><term>patent</term> <descrip type='setPhrase'>patent pending</descrip></ntig>

Table A.3 MARTIF data category representation
Group 1: Terms and term-related data categories
Subgroup 2: Term-related information, cont. 6

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.2.1.18.3	synonymous phrase	<termNote type='termType'>synonymous phrase</termNote>	Perm. instance	In a terminological entry for “response to open flame”: <termGrp><term>effect of open flame</term> <termNote type= 'termType'>synonymous phrase</termNote></termGrp> Note: Although these two items may appear to be slightly different, they are listed in a standard as synonymous.
A.2.1.19	standard text	<termNote type='termType'>standard text</termNote>	Perm. instance	Standard text taken from ISO: <termGrp><term>The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. . . .</term><termNote type='termType'> standard text</termNote></termGrp> Note: Standard texts, like other phraseological units, are also very frequently treated as contextual material, in which case they function as descriptive information. In interchange between databases that represent standard texts in this way, the following markup could be used: <descrip type='standardText'>The following standards contain ...</descrip>
A.2.2	grammar	<termNote type='grammar'>	Perm. instance	Used only where there is no finer degree of granularity.
A.2.2.1	part of speech	<termNote type='partOfSpeech'>	Perm. instance	Common permisible instances include: *n, v, adj.* <termNote type='partOfSpeech'>v</termNote>

Table A.3 MARTIF data category representation
Group 1: Terms and term-related data categories
Subgroup 2: Term-related information, cont. 7

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.2.2.2	grammatical gender	<termNote type='gender'> or alternate form for multi-noun terms: <hi type='gender'>	Perm. instance	Common permissible instances include: *m, f, n, other* <termNote type='gender'>f</termNote> Multiword noun: <term>exigence<hi type='gender'>f</hi> contractuelle du système<hi type='gender'>f</hi> qualité <hi type='gender'>f</hi></term>
A.2.2.3	grammatical number	<termNote type='grammaticalNumber'> or: <termNote type='sgNumber'> <termNote type='plNumber'>	Perm. instances	Permissible instances of *grammatical number* can include: *singular* *plural* *dual* *mass noun* *other* The plural number of a noun cannot be reduced to a single form of representation. In some cases, it is essential that the content of the data category is indeed the form of the noun plural. EXAMPLE: <ntig lang=en> <termGrp><term>plastics</term> <termNote type='grammaticalNumber'>plural</termNote><termNote type='sgNumber'>plastic</termNote></termGrp></ntig> or: <ntig lang=de> <termGrp><term>Browser</term> <termNote type='plNumber'>Browser</termNote> </termGrp></ntig>

Table A.3 MARTIF data category representation
Group 1: Terms and term-related data categories
Subgroup 2: Term-related information, cont. 8

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.2.2.4	animacy	<termNote type='animacy'>	animate inanimate other	<ntig lang=en> <termGrp><term>mare</term> <termNote type='animate'>animate</termNote> </termGrp></ntig>
A.2.2.5	noun class	<termNote type='nounClass'>	Perm. instance	Types of *noun class* include *proper noun* *common noun* EXAMPLE: <ntig lang=en> <termGrp><term>Europe</term> <termNote type='partOfSpeech'>noun</termNote> <termNote type='nounClass'>proper noun</termNote> </termGrp></ntig>
A.2.2.6	adjective class	<termNote type='adjectiveClass'>	Perm. instance	Types of *adjective class* include *proper adjective* *common adjective* EXAMPLE: <ntig lang=en> <termGrp><term>Arabian horse</term> <termNote type='partOfSpeech'>adj.</termNote> <termNote type='adjectiveClass'>proper adjective</termNote></termGrp> </ntig>
A.2.3	usage			

Table A.3 MARTIF data category representation
Group 1: Terms and term-related data categories
Subgroup 2: Term-related information, cont. 9

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.2.3.1	usage note	<termNote type='usageNote'>	Any text	<ntig> <termGrp><term>inflammable</term> <termNote type='termStatus'>deprecated</termNote> <termNote type='usageNote'>To be strictly avoided because of dangerous ambiguity</termNote></termGrp></ntig>
A.2.3.2	geographical usage	<termNote type='geographicalUsage'>	Any country code or a system-specific regional code	<langset lang=fr><ntig><termGrp><term>contrôle</term> <termNote type='geographicalUsage'>FR</termNote> </termGrp></ntig> <ntig><termGrp><term>inspection</term> <termNote type='geographicalUsage'>CA</termNote> </termGrp></ntig></langset> Geographical exclusion can be expressed by adding “NOT” in the content of the element: <termNote type='geographicalUsage'>NOT AU</termNote>
A.2.3.3	register	<termNote type='register'>	Perm. instances	Permissible instances for *register* include: *neutral register (standard)* *technical register* *in-house register* *bench-level register (shop term)* *slang register* *vulgar register* EXAMPLE: <ntig lang=en> <termGrp> <term>puller</term> <termNote type='register'>bench-level register</termNote> </termGrp> </ntig>

Table A.3 MARTIF data category representation
Group 1: Terms and term-related data categories
Subgroup 2: Term-related information, cont. 10

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.2.3.4	frequency	<termNote type='frequency'>	Perm. instances	Types of *frequency* include: *commonly used* *infrequently used* *rarely used* EXAMPLE: <ntig lang=en><termGrp> <term>retrieval end</term> <termNote type='frequency'>infrequently used</termNote> </termGrp></ntig>
A.2.3.5	temporal qualifier	<termNote type='temporalQualifier'>	Perm. instance	Types of *temporal qualifier* include: *archaic term* *outdated term* *obsolete term* <ntig lang=en><termGrp> <term>spiraeic acid</term> <termNote type='temporalQualifier'>obsolete term</termNote> </termGrp></ntig>
A.2.3.6	time restriction	<termNote type='timeRestriction'>	Any text	The 'time restriction' data category indicates the beginning, end, or both of a period when a term was current in the stated context. <ntig><termGrp><term>bacalaureate degree</term> <termNote type='timeRestriction'>in [country X] after 1993</termNote> </termGrp> <descrip type='definition'>four-year tertiary degree</descrip> </ntig>

Table A.3 MARTIF data category representation
Group 1: Terms and term-related data categories
Subgroup 2: Term-related information, cont. 11

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.2.3.7	proprietary restriction	<termNote type='proprietaryRestriction'>	Perm. instance	Types of *proprietary restriction* include: *trademark* *trade name* <termEntry> <tig lang=en> <term>E. I. du Pont de Nemours & Co.</term> </tig> <ntig lang=en><termGrp> <term>Du Pont</term> <termNote type='proprietaryRestriction'>trade name</termNote> </termGrp> </ntig> </termEntry>

Table A.3 MARTIF data category representation
Group 1: Terms and term-related data categories
Subgroup 2: Term-related information, cont. 12

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.2.4	term formation			
A.2.4.1	term provenance	<termNote type='termProvenance'>	Perm. instance	Types of term formation patterns include: *transdisciplinary borrowing* *translingual borrowing* *loan translation* *neologism* Term formation exhibits the following behavior in the normalized format. The originating discipline or language is added to the permissible instance. EXAMPLE: <termEntry> <descrip type='subjectField'>computer science</descrip> <ntig lang=en><termGrp> <term>hardware</term> <termNote type='termProvenance'>transdisciplinary borrowing from metal tools and equipment</termNote> </termGrp></ntig></termEntry>
A.2.4.2	etymology	<termNote type='etymology'>	Term source	(In a record for “aspirin”) <termNote type='etymology'>acetyl + spiraeic acid</termNote>
A.2.5	pronunciation	<termNote type='pronunciation'>	Any string, IPA	In a record for /ˌθɜːməʊˈ p l æ s t ɪ k/ : <termNote type='pronunciation'> /&IPA502;&IPA130;:m&IPA322;&IPA321;&IPA501; pl&IPA325;st&IPA319;k/</termNote>

Table A.3 MARTIF data category representation
Group 1: Terms and term-related data categories
Subgroup 2: Term-related information, cont. 13

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.2.5, cont.	pronunciation	<termNote type='pronunciation' id='...'> possibly used with <ref type='geographicalUsage' target='...'> (See example)	Any string, IPA	NOTE—Multiple pronunciations with geographical references can be marked up as follows. The markup distinguishes between British lə-bor'ə-tə-ri and American lab'ə-rə-tôr-e. <termEntry> <ntig lang=en><termGrp><term>laboratory</term> <termNoteGrp><termNote type='pronunciation' id='pr1'>l&IPA322;-bor&IPA501;&IPA322;-t&IPA322;-ri</termNote><ref type='geographicalUsage' target='pr1'>GB</ref></termNote> <termNoteGrp><termNote type='pronunciation' id='pr2'>lab&IPA501;&IPA322;-r&IPA322;-t&circo;r-e</termNote><ref type='geographicalUsage' target='pr2>US</ref> </termNoteGrp></termGrp></ntig></termEntry>
A.2.6	syllabification	<termNote type='syllabification'>	Any string	In a record for *thermoplastic*: <termNote type='syllabification'>ther mo plas tic</termNote>
A.2.7	hyphenation	<termNote type='hyphenation'>	Any string	<termNote type='hyphenation'>pho-ne-ti-cian</termNote>
A.2.8	morphology			
A.2.8.1	morphological element	<termNote type='morphologicalElement'>	A mor-pheme	In an entry for “immuno-suppressant”: <termNote type='morpheme'>im</termNote> <termNote type='morpheme'>muno</termNote> <termNote type='morpheme'>sup</termNote> <termNote type='morpheme'>press</termNote> <termNote type='morpheme'>ant</termNote>

Table A.3 MARTIF data category representation
Group 1: Terms and term-related data categories
Subgroup 2: Term-related information, cont. 14

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.2.8.2	term element	<termNote type='termElement'>	A term element	<ntig lang=en> <termGrp><term>immunosupressant</term> <termNote type='termElement'>immuno</termNote> <termNote type='termElement'>suppressant</termNote> </termGrp></ntig>
A.2.9	term status			
A.2.9.1	normative authorization	<termNote type='normativeAuthorization'>	Perm. Instance	Information on normative authorities should be included in the header information if references are uniform throughout the document or <ptr> and <ref> can be used to link to a list of normative institutions included in a <refObjectList> in the back matter. Permissible instances assigned to *normative authorization* qualifiers can include: *standardized term* *preferred term* *admitted term* *deprecated term (rejected term)* *superseded term* *legal term* *regulated term* EXAMPLE: <ntig lang=en><termGrp><term>tensile strength</term> <termNote type='normativeAuthorization'>preferred term</termNote> <ref type='normativeAuthorization' target='ISO'>International Organization for Standardization</ref></termGrp></ntig>

Table A.3 MARTIF data category representation
Group 1: Terms and term-related data categories
Subgroup 2: Term-related information, cont. 15

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.2.9.1, cont.	normative authorization	See above		*cont.* <ntig lang=en> <termGrp><term>tensile</term> <termNote type='normativeAuthorization'>deprecated term </termNote></termGrp></ntig> [See Annex D: Data Modelling Variance for additional information.]
A.2.9.2	language-planning qualifier	<termNote type='languagePlanningQualifier'>	Perm, instance	Types of *language-planning qualifier* include: *recommended term* *nonstandardized term* *proposed term* *new term* <termNote type='languagePlanningQualifier'>new term</termNote>
A.2.9.3	administrative status	<termNote type='administrativeStatus'>	Name of appropriate entity	Information on administrative organizations should be included in the header if they are uniform throughout the document or using <ptr> or <ref> as per 2.9.1, normative authorization. Administrative status can be documented by citing the following kinds of entities: *individual* *working-group* *committee* <termNote type='administrativeStatus'>Working Group 3 of Technical Committee 37 Subcommittee 3 (TC 37/ SC 3/ WG 3)</termNote>

Table A.3 MARTIF data category representation
Group 1: Terms and term-related data categories
Subgroup 2: Term-related information, cont. 16

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.2.9.4	process status	<termNote type='processStatus'>	Perm. iinstances	Types of *process status* include: *unprocessed* *provisionally processed* *finalized* <termNote type='processStatus'>finalized</termNote>
A.2.10	degree of synonymy	<termNote type='degreeOfSynonymy'>	See example A.3.1	The values used for this category are analogous to those used for *degree of equivalence* (A.3.1). <termNote type='degreeOfSynonymy'>equivalent</termNote> (See ISO 12620 for the distinction between A.2.10, *degree of synonymy* and A.3.1, *degree of equivalence*.)

Table A.3 MARTIF Data category representation
Group 1: Terms and term-related data categories
Subgroup 3: Equivalence

Position no.	Data category name	MARTIF data element type representation (Full normalized form)	Value	Examples
A.3	equivalence			
A.3.1	degree of equivalence	<termNote type='degreeOfEquivalence'>	Perm. instance	Permissible instances indicating degree of equivalence include: *narrower* *equivalent* *quasi-equivalent (near-equivalent)* *broader* *equivalent phrase* <termEntry> <tig lang=en><term>testing</term></tig> <ntig lang=de><termGrp><term>Pr&uumlt;fung</term> <termNote type='degreeOfEquivalence'>broader</termNote> <termNote type='transferComment'>The German term 'Pr&uumlt;fung' includes both inspection and test, whereas English distinguishes between the two concepts.</termNote></termGrp> </ntig> </termEntry>
A.3.2	false friend	<termNote type='falseFriend'> or <ref type='falseFriend' target='...'>, where the value of the target is the id for the entry containing the false friend; used only where an entry for the false friend actually occurs in the database	A term	<ntig lang=en><termGrp><term>control</term> <termNote type='partOfSpeech'>v</termNote> <termNote type='falseFriend' lang=fr>contrôler </termNote></termGrp> </ntig> or: <ref type='falseFriend' lang=fr target='ID7352'>contrôler </ref> where 'ID7352' is the identifier for an entry treating the term 'contrôler'

Table A.3 MARTIF Data category representation
Group 1: Terms and term-related data categories
Subgroup 3: Equivalence, cont. 2

Position no.	Data category name	MARTIF data element type representation (Full normalized form)	Value	Examples
A.3.3	directionality	<termNote type='directionality'>	Perm. instance	Types of directionality include: *monodirectional* *bidirectional* <termEntry> <tig lang=en><term>inspection</term></tig> <ntig lang=de><termGrp><term>Pr&uumlt;fung</term> <termNote type='directionality'>monodirectional</termNote> <termNote type='transferComment'>The German term 'Pr&uumlt;fung' includes both inspection and test, whereas English distinguishes between the two concepts.</termNote></termGrp> </ntig> </termEntry>
A.3.4	reliability code	<termNote type='reliabilityCode'>	System-defined	<termNote type='reliabilityCode'>correct</termNote> (Permissible instances are system-defined.)
A.3.5	transfer comment	<termNote type='transferComment'>	Text	See A.3.1 and A.3.3 for examples of the use of *transfer comment.*

Table A.3 MARTIF data category representation
Group 2: Data categories related to concept description
Subgroup 4: Subject field

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.4	subject field	<descrip type='subjectFieldLevelx'>	Perm. instances	Where only one level of subject fields is provided for: <descrip type='subjectFieldLevel1'>medicine</descrip> Where more than one level of subject fields is provided for: <descrip type='subjectFieldLevel1'>medicine </descrip> <descrip type='subjectFieldLevel2'>cancer treatment </descrip> <descrip type='subjectLevel3'>treatment of non-Hodgkin's lymphoma </descrip> Permissible instances are system-defined. Three levels are typical, but there shall be no more than 9. Subject field references can be accompanied by < ptr > or < ref > elements linking them to a complete key to the classification system included in an < objectRefList > in the back matter.
A.4.1	classification system	< descrip type = 'classificationSystem' >	Perm. instances	< descrip type = 'classificationSystem' > UDC < /descrip > Classification system is generally used together with *classification number*.
A.4.2	classification number	< descrip type = 'classificationNumber' >	Alpha-numeric	< tig lang = en > < term > main drive < /term > < descrip type = 'classicationSystem' > UDC < /descrip > < descrip type = 'classificationNumber' > 621.9-589 f23 < /descrip > < /tig > *Classification number* can also be used to represent the position of a concept in a concept system (concept position, A.7.2) or the position of a descriptor in a documentary language (A.9.2), both of which are frequently referred to as a *notation*.

Table A.3 MARTIF data category representation
Group 2: Data categories related to concept description
Subgroup 5: Concept-related description

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.5	concept-related description	<descrip type=. . .>		The <descrip> tag is not used alone. Note: Any <descrip> category (definitions, explanations, and contexts) can be qualified as a translation if it is taken from a translated text. Such notations should conform to the following format: <tig lang=en><term>tolerance </term> <descrip type='definition'>The difference between the upper and lower tolerance limits.</descrip></tig> <ntig lang=fr><term>tolérance</term> <descripGrp><descrip type='definition' lang=fr>Écart entre les limites supérieure et inférieure de tolérance.</descrip> <descripNote>translated concept description</descripNote> </descripGrp></ntig>
A.5.1	definition	< descrip type = 'definition' >	Text	< tig lang = en > < term > adhesive < /term > < descrip type = 'definition' > substance capable of holding materials together by adhesion < /descrip > < /tig > Definitions can be designated as being *intensional definitions*, *extensional definitions*, *and partitive definitions*. EXAMPLE: <descripGrp><descrip type='definition'>substance capable of holding materials together by adhesion</descrip> <descripNote>intensional definition</descripNote> <descripGrp>

Table A.3 MARTIF data category representation
Group 2: Data categories related to concept description
Subgroup 5: Concept-related description, cont. 2

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.5.1, cont.				EXAMPLE 2: < ntig lang = en > < term > planets in the solar system < /term > < descripGrp > < descrip type = 'definition' > Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune and Plato </descrip> < descripNote > extensional definition < /descripNote > < /descripGrp > < /ntig > <ntig lang=en><term> computer workstation </term> <descripGrp><descrip type='definition'> workstation comprising a CPU, a display terminal, variable user input interfaces (e.g., keyboards, mice, scanners, etc.) and variable output devices (e.g. printers, speakers, etc.). </descrip><descripNote>partitive definition</descripNote> </descripGrp></ntig>
A.5.2	explanation	< descrip type = 'explanation' >	Text	< tig lang = en > < term > catalyst < /term > < descrip type = 'explanation' > material that triggers or accelerates a chemical reaction < /descrip > < /tig >
A.5.3	context	< descrip type = 'context' >	Text	< tig lang = en > < term > context < /term > < descrip type = 'context' > In addition to providing information about concepts, contexts provide text-typological information valuable for determining term usage and collocational references. Consequently . . . < /descrip > < /tig > Contexts can be designated as being *defining contexts*, *explanatory contexts*, *associative contexts*, *linguistic contexts*, and *metalinguistic contexts*.

Table A.3 MARTIF data category representation
Group 2: Data categories related to concept description
Subgroup 5: Concept-related description, cont. 3

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.5.3, cont.	context	< descrip type = 'context' >	Text	EXAMPLE: <termEntry><ntig lang=en> <termGrp><term>weaving</term></termGrp> <descripGrp><descrip type='context'>Weaving is a method of producing cloth by interfacing two or more sets of yarns, at least one warp and one filling set, at right angles to each other.</descrip> <descripNote type='contextType'>defining context</descripNote> </descripGrp></ntig> < /termEntry > < termEntry > <ntig lang=en> <termGrp><term>reed</term></termGrp> <descripGrp><descrip type='context'>The "reed" which keeps the warp yarns separated, helps to determine cloth width.</descrip> <descripNote type='contextType'>explanatory context</descripNote> </descripGrp></ntig> <ntig lang=en><termGrp><term>cloth apron</term></termGrp> <descripGrp><descrip type='context'>The shuttle carrying the filling yarn goes through the shed from one side to the other, and the yarn left by its passing is beaten forward by the reed against the tied-in knots at the cloth apron. </descrip><descripNote>associative context </descripNote> </descripGrp> </ntig></termEntry>
A.5.4	example	< descrip type = 'example' >	Text	< tig lang = en > < term > adhesive < /term > < descrip type = 'example' > contact cement < /descrip > < /tig >
A.5.5	non-textual illustration			
A.5.5.1	figure	< ptr type = 'figure' target = '[name-of-a-graphics-file]' >	A graphic	The < ptr > element points to a properly bundled graphic file or to an < xref > element in the back matter, where the < xref > references an external graphic file.

Table A.3 MARTIF data category representation
Group 2: Data categories related to concept description
Subgroup 5: Concept-related description, cont. 4

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.5.5.2	audio	< ptr type = 'audio' target = '[name-of-a-sound-file]' >	An audio recording	The < ptr > element points to a bundled audio file or to an < xref > element in the back matter, which references an external audio file.
A.5.5.3	video	< ptr type = 'video' target = '[name-of-a-video-file]' >	A video recording	The < ptr > element points to a bundled video file or an < xref > element in the back matter, which references an external video file.
A.5.5.4	table	< ptr type = 'table' target = '[name-of-a-table-file]' >	A table	The < ptr > element points either to a table encoded in the back matter or to a bundled table file or an < xref > element in the back matter, which references an external table file .
A.5.5.5	other binary data	<ptr type=otherBinaryData' target='[name-of-a-data-file]'>	A data file	The <ptr> element points either to a bundled data file or to an <xref> element in the back matter, which references an external data file .
A.5.6	unit	< descrip type = 'unit' >	Perm. instances	< ntig lang = en > < term > temperature < /term > < descrip type = 'unit' > degrees Celsius < /descrip > < /ntig > (Set of permissible instances will vary according to the item being defined and its subject field. This element can be replicated within a single < tig > or < ntig > .)
A.5.7	range	< descrip type = 'range' >	Perm. instances	< ntig lang = en > < term > liquid water temperature < /term > < descrip type = 'range' > 0 °C - 100 °C < /descrip > < /ntig > Ranges can be expressed as formulas using formal or mathematical notation.

Table A.3 MARTIF data category representation
Group 2: Data categories related to concept description
Subgroup 5: Concept-related description, cont. 5

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.5.8	characteristic	< descrip type = 'characteristic' >	Text	< termEntry > < langSet lang = en > < ntig > < termGrp > < term > lion < /term > < termNote type = 'termType' > common name < /termNote > < /termGrp > < descrip type = 'explanation' > a large flesh-eating cat < /descrip > < descrip type = 'characteristic' > mammal < /descrip > < descrip type = 'characteristic' > tawny color < /descrip > < descrip type = 'characteristic' > mane < /descrip > < /ntig > < ntig > < termGrp > < term > Panthera leo < /term > < termNote type = 'termType' > international scientific term < /termNote > < note > appears in italics in conjunction with Roman type < /note > < /termGrp > < /ntig > Option: < term > < hi type = 'italics' > Panthera leo < /hi > < /term > < /langSet > < /termEntry >

Table A. 3 MARTIF data category representation
Group 2: Data categories related to concept description
Subgroup 6: Concept relation

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.6	concept relation			
A.6.1	generic relation	<descrip type='genericRelation'>	A term	All data categories included under A.6 exhibit the following behavior in the normalized format. These items can include a <ptr> reference to the related item.: <ntig lang=en> <termGrp> <term>grape harvest</term> </termGrp> <descripGrp> <descrip type='temporalRelation'>autumn</descrip> <ptr type='crossReference' target='autumn'> </descripGrp> </ntig> Although this short example shows the relation at the <ntig> level, it would most frequently appear at the <termEntry> or possibly the <langSet> level.
A.6.2	partitive relation	<descrip type='partitiveRelation'>	A term	
A.6.3	sequential relation	<descrip type='sequentialRelation'>	A term	
A.6.3.1	temporal relation	<descrip type='temporalRelation'>	A term	
A.6.3.2	spatial relation	<descrip type='spatialRelation'>	A term	
A.6.4	associative relation	<descrip type='associativeRelation'>	A term	

Table A.3 MARTIF data category representation
Group 2: Data categories related to concept description
Subgroup 7: Concept position

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.7	conceptual structures			
A.7.1	concept system	<descrip type='conceptSystem'>	Perm. instance	Types of *concept system* can include: *generic concept system* *partitive concept system* *sequential concept system* *associative concept system* <termEntry id='ID352.48.2'> <langSet lang=en><ntig><termGrp> <term>tiger</term><termNote type='termType'>common name</termNote></termGrp></ntig> <ntig><termGrp><term>Panthera tigris</term> <termNote type='termType'>international scientific term</termNote></termGrp> <descripGrp><descrip type='conceptSystem'>generic concept system</descrip><ptr type='conceptSystem' target='catssys'></descripGrp> <descripGrp><descrip type='superordinateConcept'>Panthera</descrip><ptr type='crossReference' target='ID352.48'> </descripGrp> <descripGrp><descrip type='subordinateConcept'> Siberian tiger</descrip><ptr type='crossReference' target='ID352.48.2.4'></descripGrp> <descripGrp><descrip type='coordinateConcept'> lion </descrip><ptr type='crossReference' target='ID352.48.1'> </descripGrp></ntig></langSet></termEntry>
A.7.2	concept position	<descrip type='conceptPosition'>	Alpha-numeric	
A.7.2.1	broader concept	<descrip type='broaderConcept'> (used together with <ptr>; see examples)	A term	
A.7.2.2	superordinate concept	<descrip type='superordinateConcept'> (used together with <ptr>; see examples)	A term	
A.7.2.3	subordinate concept	<descrip type='subordinateConcept'> (used together with <ptr>; see examples)	A term	
A.7.2.4	coordinate concept	<descrip type='coordinateConcept'> (used together with <ptr>; see examples)	A term	
A.7.2.5	related concept	<descrip type='relatedConcept'> (used together with <ptr>; see examples)	A term	

Table A.3 MARTIF data category representation
Group 2: Data categories related to concept description
Subgroup 7: Concept position, cont. 2

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.7, cont.	conceptual structures			The values of *id* used in this example represent hypothetical concept system notation; see Example A.1, a hypothetical partial generic concept system, which could be included as a < refObjectList type = 'conceptSystem' id = 'catsys' > in the back matter. The *ids* in the other references could point to other entries in the database or they could point to positions in the concept system in the back matter. The determining element is the value of the *id*, i.e., whether it identifies a term entry or a back-matter item. If pointers for both options were desired, the *ids* would of course be unique for each term entry and for each item in the concept system, and two <ptr> or <ref> elements or a combination of the two would have to be used to distinguish between the different targets.

Table A.3 MARTIF data category representation
Group 2: Data categories related to concept description
Subgroup 8: Note

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.8	note	<note>	Any text TC=GI	<termEntry> <langSet lang=en> <tig> <term>adhesive</term> <descrip type='definition'>substance capable of holding materials together by adhesion</descrip> </tig> <ntig> <termGrp> <term>glue</term> <termNote type='normativeAuthorization'>deprecated term </termNote> </termGrp> <descripGrp><descrip type='definition'>a substance capable of holding materials together by surface attachment</descrip> <note>The term glue was originally used for an adhesive prepared from a hard gelatine . . . </note></descripGrp> </ntig> </langSet> </termEntry>

Table A.3 MARTIF data category representation
Group 3: Administrative data categories
Subgroup 9: Documentary language

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.9	documentary language	<admin type='documentaryLanguage'>	Name	<admin type='documentaryLanguage'>NASA Thesaurus</admin>
A.9.1	thesaurus name	<admin type='thesaurusName'>	Name	<admin type='thesaurusName'>NASA Thesaurus</admin> See Figure A.2 for a sample thesaurus entry. Other examples shown in this chart reference this figure.
A.9.2	thesaurus descriptor	<admin type='thesaurusDescriptor'>	A descriptor	<admin type='thesaurusDescriptor'>engine noise</note>
A.9.2.1	top term	<admin type='topTerm'> Can be used with <ptr> or <ref>	A descriptor	<tig lang=en> <term>jet aircraft noise</term> <admin type='thesaurusName'>NASA Thesaurus</admin> <admin type='topTerm'>noise (sound)</admin> </tig></langGrp> Option 1: Some databases may cross-reference to the entry for another thesaurus term: < tig lang = en > < termGrp > < term > jet aircraft noise < /term > < ref type = 'topTerm' target = 'id6895' > noise (sound) < /ref > < /termGrp > < /tig > Option 2: In other database environments, the thesaurus reference can point to a complete thesaurus entry contained in a < refObjectList > in the backmatter or to an < xref > in the back matter that points to an external thesaurus resource.

Table A.3 MARTIF Data category representation
Group 3: Administrative data categories
Subgroup 9: Documentary language, cont., 2

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.9.2.2	broader term	<admin type='broaderTerm'> Can be used with <ptr> or <ref>	A descriptor	<term>jet aircraft noise</term> <admin type='broaderTerm'>aircraft noise</admin> (See A.9.2.1 for use of <ptr> and <ref>.)
A.9.2.3	narrower term	<admin type='narrowerTerm'> Can be used with <ptr> or <ref>	A descriptor	<term>jet aircraft noise</term> <admin type='narrowerTerm'>sonic booms</admin> (See A.9.2.1 for use of <ptr> and <ref>.)
A.9.2.4	related term	<admin type='relatedTerm'> Can be used with <ptr> or <ref>	A term	<term>aircraft noise</term> <admin type='relatedTerm'>noise injuries</admin> (See A.9.2.1 for use of <ptr> and <ref>.)
A.9.3	nondescriptor	<admin type='nondescriptor'> Can be used with <ptr> or <ref>	A term	<admin type='nondescriptor'>noise, engine</admin> (See A.9.2.1 for use of <ptr> and <ref>.)
A.9.4	keyword	<admin type='keyword'>	A term	(The example shows a keyword for this standard) <admin type='keyword'>data category</admin>
A.9.5	index heading	<admin type='indexHeading'> Can be used with <ptr> or <ref>	A term	<admin type='indexHeading'>definition</admin> [Every data category cited in this chart is listed as an *index heading* in ISO 12620, along with inverted forms and variants.] Keywords are almost always included as index headings, but not all index headings are keywords that actually occur in documents.

Table A.3 MARTIF data category representation
Group 3: Administrative data categories
Subgroup 10: Management function and collection management categories

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.10	administrative information			
A.10.1	terminology management transaction	<admin type='terminologyMgmtTransaction'>	Perm. instances	Permissible instances for terminology management transactions include: *origination* *input* *modification* *check* *approval* *withdrawal* *standardization* *exportation* *importation* <admin type='terminologyMgmtTransaction'>origination</admin>
A.10.2	terminology management functions			
A.10.2.1	date	<date type='...'> (See A.10.2.1.1 - A.10.2.1.9)	Date: YYYY-MM-DD TC=GI	See examples for A.10.2.1.1-A.10.2.1.9

Table A.3 MARTIF data category representation
Group 3: Administrative data categories
Subgroup 10: Management function and collection management categories, cont. 2

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.10.2.1.1	origination date	<date type='origination'>	Date: YYYY-MM-DD with option for date and time: YYYY-MM-DD hh:mm:ss	Although ISO 12620 does not mandate any one format for *date*, the form specified here shall be used for exchange environments. All data categories included under A.10.2.1 exhibit the following behavior in the normalized format: <date type='origination'>1993-10-15</admin> The full four digit year number shall be used for interchange purposes. Option: <date type='origination'>1993-10-15 13:15:30</admin>
A.10.2.1.2	input date	<date type='input'>		
A.10.2.1.3	modification date	<date type='modification'>		
A.10.2.1.4	check date	<date type='check'>		
A.10.2.1.5	approval date	<date type='approval'>		
A.10.2.1.6	withdrawal date	<date type='withdrawal'>		
A.10.2.1.7	standardization date	<date type='standardization'>		
A.10.2.1.8	exportation date	<date type='exportation'>		
A.10.2.1.9	importation date	<date type='importation'>		
A.10.2.2	responsibility	<admin type='responsibility'>	Perm. instance	Data categories included under A.10.2.2 shall exhibit one of the following behaviors in the normalized format: Option 1: <admin type='originator'>J. Doe</admin> Option 2: Option 1 plud: <ptr type='originator' target='doej'> Option 3: <ref type='originator' target='doej'>J.Doe</ref> Where the target is a pointer to a <refObject> including personnel data located in the back matter or to an <xref> targeting an external personnel file. Permissible instances are system defined.
A.10.2.2.1	originator	<admin type='originator'>		
A.10.2.2.2	inputter	<admin type='inputter'>		
A.10.2.2.3	updater	<admin type='updater'>		
A.10.2.2.4	checker	<admin type='checker'>		

Table A.3 MARTIF data category representation
Group 3: Administrative data categories
Subgroup 10: Management function and collection management categories, cont. 3

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.10.2.2.5	approver	< admin type = 'approver' >	Perm. instance	See previous page It is not within the scope of this International Standard to specify data categories for responsibility entries within local systems. See 8.4.3, MARTIF back, for further information on shared resources included in the back matter.
A.10.2.2.6	user	< admin type = 'user' >		
A.10.2.2.7	withdrawer	< admin type = 'withdrawer >		
A.10.2.2.8	exporter	< admin type = 'exporter >		
A.10.2.2.9	importer	< admin type = 'importer >		
A.10.2.2.10	subset owner	< admin type = 'subsetOwner' >		
A.10.3	subset identifier			
A.10.3.1	customer subset	< admin type = 'customerSubset' >	Perm. instance	All data categories included under A.10.3 exhibit the following behavior in the normalized format: < admin type = 'customerSubset' > Acme Casting < /admin > Permissible instances are defined in individual systems. Typical permissible instances for A.10.3.9, *security subset*, include: *public* *confidential* Some subset items (such as those involving *customer subset* or *business unit subset*) can be associated with < ptr > or < ref > , which serve as links to personal or business-related < refObject > s contained in the back matter.
A.10.3.2	initial customer subset	< admin type = 'initialCustomerSubset' >		
A.10.3.3	project subset	< admin type = 'projectSubset' >		
A.10.3.4	initial project subset	< admin type = 'initialProjectSubset' >		
A.10.3.5	product subset	< admin type = 'productSubset' >		
A.10.3.6	application subset	< admin type = 'applicationSubset' >		
A.10.3.7	environment subset	< admin type = 'environmentSubset' >		

Table A.3 MARTIF data category representation
Group 3: Administrative data categories
Subgroup 10: Management function and collection management categories, cont. 4

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.10.3.8	business unit subset	< admin type = 'businessUnitSubset' >	Perm. instance	See previous page.
A.10.3.9	security subset	< admin type = 'securitySubset' >		
A.10.4	authorization information			Authorization information can be associated with the < item > GI and included in < refObject > s contained in the back matter.
A.10.4.1	authorization function	< admin type = 'authorizationFunction' > or: < item type = 'authorizationFunction' >	Perm. instance	Permissible instances are system-defined functions. Typical examples include: < admin type = 'authorizationIdentifier' > read < /admin > < admin type = 'authorizationIdentifier' > write < /admin >
A.10.4.2	authorization identifier	<admin type='authorizationIdentifier'> or: < item type = 'authorizationIdentifier' >	Perm. instance	Permissible instances are system-defined and may be real names or aliases. Typical examples include: <admin type='authorizationIdentifier'>Jones</admin>
A.10.4.3	authorization password	<admin type='authorizationPassword'> or: < item type = 'authorizationPassword' >	Perm. instance	Permissible instances are system-defined and are generally user-selected. Typical examples include: <admin type='authorizationPassword'>007 </admin>
A.10.4.4	job title	<admin type='jobTitle'> or: < item type = 'authorizationJobTitle' >	Perm. instance	Permissible instances are system-defined. Typical examples include: <admin type='jobTitle'> superuser</admin> <admin type='jobTitle'> terminologist </admin>
A.10.5	user suggestion	< admin type = 'userSuggestion' >	Text	< admin type = 'userSuggestion' > [any suggested change in a terminological entry] < /admin >

Table A.3 MARTIF data category representation
Group 3: Administrative data categories
Subgroup 10: Management function and collection management categories, cont. 5

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.10.5, cont.	user suggestion			Option: < adminGrp > < admin type = 'userSuggestion' > [any suggested change in a terminological entry] < /admin > < adminNote type = 'jobTitle' > tech writer < /adminNote > < /adminGrp >
A.10.6	administrative term qualifiers			
A.10.6.1	entailed term	< hi type = 'entailedTerm' target = 'ID . . .' > . . . < /hi > where the value of 'ID . . .' is the ID for the term entry containing the *entailed term*.	a term	< ntig lang = en > < term > adhesive < /term > < descrip type = 'definition' > substance capable of holding materials together by < hi type = 'entailedTerm' target = 'ID4.2' > adhesion < /hi > < /descrip > < /ntig >
A.10.6.2	sort key	< admin type = 'sortKey' >	a term	< ntig lang = en > < term > 2.2-Dihydropyran < /term > < admin type = 'sortKey' > Dihydropyran < /admin > < /ntig > < /langGrp >
A.10.6.3	search term	< admin type = 'searchTerm' >	a term	< langGrp type = en > < ntig lang = en > < term > diaphragm spring fingers < /term > < admin type = 'searchTerm' > spring < /admin > < /ntig >

Table A.3 MARTIF data category representation
Group 3: Administrative data categories
Subgroup 10: Management function and collection management categories, cont. 6

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.10.7	language symbol	< [any GI] lang = [any symbol from ISO 639] >	Any lang symbol from ISO 639 TC = attrib	Although the *lang* attribute can be used with any GI, it shall always be used with < langSet > , < tig > , and < ntig > , as indicated throughout the examples in this International Standard unless the *lang* value is inherited. Generally other uses of *lang* would involve situations where an element in one language is embedded in a stream of material appearing in another language. See Clause 6 for details.
A.10.8	foreign text	< foreign lang = [any symbol from ISO 639] >	Text TC = GI	Used to markup a word, phrase, or extended text in one language that is embedded in text in another language. < ntig lang = de > < term > vertragliche Anwendung < /term > < descrip type = 'context' > Vertragliche Anwendung von Beurteilungs- und Genehmigungs- oder Registrierungs-Systemen (< foreign lang = en > second party < /foreign >) < /descrip > < /ntig >
A.10.9	collating sequence	< admin type = 'collatingSequence' >	See example	Permissible instances: *continuous alphabetical sequence* *discontinuous alphabetical sequence* *special alphabetical sequence,* *systematic collating sequence* *mixed sequence* *ASCII sequence* < admin type = 'collatingSequence' > continuous alphabetical sequence, Latin < /admin > < admin type = 'collatingSequence' > ASCII, normalized < /admin >

Table A.3 MARTIF data category representation
Group 3: Administrative data categories
Subgroup 10: Management function and collection management categories, cont. 7

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.10.10	entry type	< termEntry type = '[an instance per the items listed in the *example* column]' > < termEntry type = 'conceptEntry' > < termEntry type = 'archiveEntry' > etc.	See example	Entry types that can occur in the body of a MARTIF document include: *terminological entry* *concept entry* *lexicographical entry* *archive entry* *phraseological entry* *collocation entry* *set-phrase entry* *standard-text entry* *cross-reference entry* < termEntry type = 'conceptEntry' > . . . The same types can apply for records. Types of < refObjects > that can be used in the back matter are listed in Section A.11.4.
A.10.11	element working status	< admin type = 'elementWorkingStatus' >	See example	Working status levels include: *starter element* *working element* *consolidated element* *archive element* *exported element* *imported element* < termEntry > < admin type = 'elementWorkingStatus' > starter entry < /admin > . . . < /termEntry > *Elements* can be *fields*, *records*, or *entries*.

Table A.3 MARTIF data category representation
Group 3: Administrative data categories
Subgroup 10: Management function and collection management categories, cont. 8

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.10.12	target database	< admin type = 'targetDatabase' >	Database or format name	This data category indicates the database to which an entry is being or has been exported. < admin type = 'targetDatabase' > Termium < /admin >
A.10.13	entry source	< admin type = 'entrySource' >	Database or format name	This data category indicates the database from which an entry was imported. < admin type = 'entrySource' > Eurodicautom < /admin >
A.10.14	concept identifier	< termEntry id = '…' >	ID	MARTIF id values are SGML “words” and shall adhere to the following rules: • They shall begin with an alpha character. • Hyphens and dots (full stops) are allowed. • No spaces, diacritics, underscores, or other punctuation marks or SGML entities shall be used. Where necessary, this International Standard adds the mnemonic “ID” to identifiers that do not begin with an alpha character. < termEntry type = 'conceptEntry' id = 'ID10.10.1' > Concept identifiers can be used to unify separate data records into a single virtual data entry or to provide a permanent concept entry identifier in environments where the physical entry number is subject to change.
A.10.15	entry identifier	< termEntry id = '…' >	ID	< termEntry id = 'A.10.10.15' > In the normalized format, all terms clearly identified with a given concept should appear in the same terminological entry. As a result of administrative considerations in some databases, concept and physical entry identifiers may not always be identical.

Table A.3 MARTIF data category representation
Group 3: Administrative data categories
Subgroup 10: Management function and collection management categories cont. 9

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.10.16	record identifier	< admin type = 'recordIdentifier' >		Individual physical records can be combined to form virtual entries in local databases, and each one of these records can have its own ID reference. If this information is to be tracked at the interchange level, it can be identified with < admin type = 'recordIdentifier' > idxyz < /admin > enclosed, for instance, in an < ntig > associated with the original record.
A.10.17	file identifier	< admin type = 'fileIdentifier' >	ID	File identifiers usually are features of local applications, but if several files are merged at the interchange level, it may be desirable to attach a file identifier to each < termEntry > so that the < termEntry > can be traced back to the originating file. Such information should appear in the entry before the first < tig > . < termEntry > < admin type = 'fileIdentifier' > TERMIUM A < /admin > < tig > … < /tig > < /termEntry >
A.10.18	cross-reference	< ptr type = 'crossReference' target = '. . .' > or < ref type = 'crossReference' target = '. . .' > content < /ref >	Targeted term entry	Section 12 of this chart and Annex C treat general linking behavior in MARTIF. Some links are treated as data categories because they commonly appear as such in some databases. Generally, all items indicated as using < ptr > can also be represented by < ref > .
A.10.18.1	see	< admin type = 'see' > < ptr type = 'crossReference' target = 'ID . . .' > where 'ID . . .' is the entry identifier for the referenced entry	Targeted term enntry	< ntig lang = en > < termGrp > < term > noise, engine < /term > < /termGrp > < adminGrp > < admin type = 'see' > engine noise < /admin > < ptr type = 'crossReference' target = 'ID25821' > < /adminGrp > < /ntig >

Table A.3 MARTIF data category representation
Group 3: Administrative data categories
Subgroup 10: Management function and collection management categories, cont. 10

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.10.18.1, cont.	see	See above	See above	or: < ntig lang = en > < termGrp > < term > noise, engine < /term > < ref type = 'see' target = 'ID25821 > engine noise < /ref > < /termGrp > < /ntig > Although this example is a case of an inverted term, the use of a "see" field is more common in many database environments.
A.10.18.2	see also	< admin type = 'seeAlso' > or as noted above for *see*	Targeted entry	< ntig lang = en > < termGrp > < term > inspection < /term > < /termGrp > < adminGrp > < admin type = 'seeAlso' > test < /admin > < /adminGrp > < /ntig > or: < ntig lang = en > < termGrp > < term > inspection < /term > < ref type = 'seeAlso' target = 'ID25584 > test < /ref > < /termGrp > < /ntig >
A.10.18.3	inverted term	< termNote type = 'termType' > invertedTerm < /termNote > Or as noted above for *see* where the value of '…' is the entry identifier for the spoken form of the term. Inverted terms usually appear as index items similar to < term > , but they are included here because they serve an administrative function.	Perm. instance or ID	< termEntry > < ntig lang = en > < termGrp > < term > noise, engine < /term > < termNote type = 'termType' > invertedTerm < /termNote > < ptr type = 'see' target = 'ID4.3' > < /termGrp > < /ntig > < /termEntry > [Where ID4.3 is the entry identifier for an entry treating 'engine noise'. See also A.10.18.1.]

Table A.3 MARTIF data category representation
Group 3: Administrative data categories
Subgroup 10: Management function and collection management categories, cont. 11

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.10.18.4	permuted term	< termNote type = 'termType' > permutedTerm < /termNote > Or as noted above for *see* where the value of '…' is the entry identifier for the spoken form of the term. Permuted terms usually appear as index items similar to < term > , but they are included here because they serve an administrative function.	Perm. instance or ID	< termEntry > < ntig lang = en > < termGrp > < term > engine, jet . . . noise < /term > < termNote type = 'termType' > permutedTerm </termNote> < ptr type = 'see' target = 'ID4.3.1' > < /termGrp > < /ntig > < /ntig > < /termEntry > [Where ID4.3.1 is the entry identifier for an entry treating 'jet engine noise'.]
A.10.18.5	homograph	< admin type = 'homograph' > Or with < ptr > as noted in A.10.18.	The homo-graph	< termEntry id = 'bloom1' > < descrip type = 'subjectFieldLevel1' > steelmaking /descrip > < ntig lang = en > < term > bloom < /term > < descripGrp > < descrip type = 'definition' > semi-finished steel bar or block produced by hot-rolling or forging < /descrip > < /descripGrp > < adminGrp > < admin type = 'homograph' > bloom < /admin > < ptr type = 'crossReference target = 'bloom2' > < /adminGrp > < /ntig > < /termEntry > <termEntry id='bloom2'> <descrip type='subjectFieldLevel1'>galvanizing </descrip> <langSet lang=en><ntig> <term>bloom</term> <descripGrp><descrip type='definition'>flower-like crystalline deposition pattern </descrip></descripGrp> < adminGrp > < admin type = 'homograph' > bloom < /admin > < ptr type = 'crossReference target = 'bloom1' > < /adminGrp > < /ntig > <ntig><term> efflorescence </term></ntig></langSet> </termEntry>

Table A.3 MARTIF data category representation
Group 3: Administrative data categories
Subgroup 10: Management function and collection management categories, cont. 12

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.10.18.6	antonym	< admin type = 'antonym' > or as noted in A.10.18.5	A term	< ntig lang = en > < term > GO-gauge < /term > < adminGrp > < admin type = 'antonym' > NO-GO gauge < /admin > < ptr type = 'crossReference' target = 'xxEntryID' > </adminGrp></ntig> The data category *antonym* can be further differentiated as a *complement* or a *contrast* (see ISO 12620).
A.10.19	source	< admin type = 'source' >	A total bibliographic entry	< admin type = 'source' > Wüster, Eugen. The Machine Tool. Paris: UNESCO, 1968 < /admin > NOTE: This data category shall be used in entries where the entire bibliographical entry appears in the term entry itself. The documentation of bibliographic information in separate bibliographic entries using SGML elements from ISO 12083 is recommended. See A.10.20, source identifier, and Annex B for further information.
A.10.20	source identifier	< ptr type = 'sourceIdentifier' target = '[a source identifier per A.10.20, ISO 12620]' > or < ref type = 'sourceIdentifier' target = '[a source identifier per A.10.20, ISO 12620]' > p. xx < /ref >	None or page number; target is a source identifier	< ptr type = 'sourceIdentifier' target = 'WEmt1968' > NOTE: Source identifier cross-references point to fully structured bibliographical entries contained in the back matter of the document in question or to an external file. See Annex B.

Table A.3 MARTIF data category representation
Group 3: Administrative data categories
Subgroup 10: Management function and collection management categories, cont. 13

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.10.21	namespace identifier		An URL or an FPI	
A.10.21.1	URL (Uniform Resource Locator)	< ptr type = 'URL' target = 'xxx' > or < ref type = 'URL' target = 'xxx' > content < /ref >	An URL	The < ptr > GI shall point to a < refObject > or to an < xref > in the back matter, which in turn serves as an external reference that can function as a hypertext link to a World Wide Web page. The target can be a short form identifying the web page or the owner of the web page, but the true URL in its full valid form appears in the URL list in the back matter. < ptr type = 'URL' target = 'ISO' > Back matter: < refObjectList type = 'URL' > < refObject type = 'URL' > < item type = 'URL' id = 'ISO' > http://www.iso.or.ch < /item > < /refObject > < /refObjectList >
A.10.21.2	FPI (Formal Public Identifier)	< ptr type = 'FPI' target = 'xxx' > or < ref type = 'FPI' target = 'xxx' > … < /ref >	An FPI	The < ptr > GI shall point to a < refObject > or to an < xref > in the back matter, which in turn serves as an external reference that can function as a hypertext link to a unique identifier representing a given document. The target can be a short form identifying the document, but the true FPI in its full valid form appears in the FPI list in the back matter. < ptr type = 'FPI' target = 'MARTIF-DTD' > Back matter: < refObjectList type = 'FPI' > < refObject type = 'FPI' > < item type = 'FPI' id = 'MARTIF-DTD' > "ISO 12200:1997/DTD for MARTIF (framework) //EN" < /item > < /refObject > < /refObjectList >

Table A.3 MARTIF data category representation
Group 3: Administrative data categories
Subgroup 10: Management function and collection management categories, cont. 14

Position no.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.10.22	originating entity			
A.10.22.1	originating person	< admin type = 'originatingPerson' > or < ptr type = 'originatingPerson' >	A person's name	Data categories A.10.22.1 - A.10.22.3 can exhibit the following behavior in normalized format: < admin type = 'originatingInstitution' > WHO < /admin > or: < ptr type = 'originatingInstitution' target = 'WHO' > where the target links to an < refObject > in the back matter containing information on a person, institution, or database from which the referenced item originates.
A.10.22.2	originating institution	< admin type = 'originatingInstitution' > or < ptr type = 'originatingInstitution' >	An institution name	
A.10.22.3	originating database	< admin type = 'originatingDatabase' > or < ptr type = 'originatingDatabase' >	A database ID	

Table A.3 MARTIF data category representation
Group 4: Function-related markup categories
Subgroup 11: Organizational data categories

Position No.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.11	MARTIF elements			
A.11.1	MARTIF containers			
A.11.1.1	terminological entry	<termEntry> <termEntry type='conceptEntry'> <termEntry type='phraseologicalEntry'> etc.	Other groups and elements TC=GI	The <termEntry> GI encloses all information pertaining to a single concept. This information is further subdivided into smaller groups and individual units of information. Examples of <termEntry> occur throughout this Annex. See also A.10.10, *entry type*.
A.11.1.2	language set	<langSet lang=...>	<tig>s and <ntig>s in a given language TC=GI	The <langSet> GI is used to enclose several <tig> or <ntig>elements in the same language. See A.11.1.8 for an example of <langSet> used to contain more than one <ntig> in a given language. It shall include the *lang*= attribute unless language is implied by inheritance.
A.11.1.3	term information group	<tig>	Elements compris-ing a tig TC=GI	The <tig>GI encloses all information pertaining to a single term, i.e., only one <term> can appear in a <tig>. It shall include the *lang*= attribute unless language is implied by inheritance. <tig>s do not feature any additional level of embedding. <tig lang=en><term>fancy leather</term> <descrip type='definition'>leather made from hides ...that have commercial importance...</descrip> <note>Such processing may be graining ...</note></tig>

Table A.3 MARTIF data category representation
Group 4: Function-related markup categories
Subgroup 11: Organizational data categories, cont. 2

Position No.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.11.1.4	nested term information group	<ntig>	Elements comprising a tig TC=GI	The <ntig> element is used whenever it is necessary or desirable to include a nested element in any one of the elements of a <tig>. It shall include the *lang*= attribute unless language is implied by inheritance. <ntig lang=en> <termGrp><term>adhesive </term></termGrp> <descripGrp><descrip type='definition'>substance capable . . . </descrip> <note>The term "glue". . .</note> </descripGrp> </ntig>
A.11.1.5	term group	<termGrp>	Other data elements TC=GI	If one or more related data categories must be grouped unambiguously with a <term> data element, <termGrp> ... </termGrp> shall be used to delimit all items that belong to the term and not to the rest of the terminological entry. Not all <term> instances in a terminological entry need to be identified by <termGrp> if no additional elements are to be grouped with that term. Only one <term> can appear inside a <termGrp>, but multiple <termNote>s , even multiple instances of <termNote type='termType'>, can be used inside a <termGrp>. Example: <langSet lang=en><ntig><termGrp> <term>Galium aristatum</term> <termNote type='termType'>international scientific term </termNote> <termNote type='termType'>main entry term </termNote><note>name appears in italics in conjunction with Roman type</note></termGrp> <descripGrp> . . . </descripGrp></ntig> <ntig><termGrp><term >giant woodruff </term> <termNote type='termType'>common name</termNote> </termGrp> . . . </ntig></langSet>

Table A.3 MARTIF data category representation
Group 4: Function-related markup categories
Subgroup 11: Organizational data categories, cont. 3

Position No.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.11.1.6	term note group	<termNoteGrp>	A term note plus (an)other element(s) TC=GI	If <termNote> is qualified by information that does not pertain to the entire <termGrp>, but rather just to the <termNote> itself (i.e., in the form of a <ptr>, <ref>, or <note>), the element(s) and the <termNote> are grouped together in a <termNoteGrp>. See Example 6 in this International Standard.
A.11.1.7	description group	<descripGrp>	A <descrip> plus (an)other element(s) TC=GI	If it is desirable to group one or more related data categories unambiguously with a <descrip> data element (such as a link to a bibliographic reference), <descripGrp> . . . </descripGrp> can be used to delimit all those items that belong to the description and do not necessarily pertain to the rest of the terminological entry. Not all <descrip> instances in a terminological entry need to be identified by <descripGrp> if no additional elements are to be grouped with any given descriptive element. <descripGrp> can be used with any type of <descrip> data element as outlined in these charts. Only one <decrip> shall appear in any one <descripGrp>, but more than one <descripGrp> can appear in an <ntig>. <ntig lang=en> <termGrp><term>pipe</term> <termNote type='termType'>preferred term</termNote> </termGrp> <descripGrp><descrip type='definition'>A tube, or a line of tubes, used to convey a fluid. </descrip> <ref type='bibliographic' target='EWmt1968'>Position No. 108 </ref> </descripGrp> </ntig>

Table A.3 MARTIF data category representation
Group 4: Function-related markup categories
Subgroup 11: Organizational data categories, cont. 4

Position No.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.11.1.8	administrative group	<adminGrp>	An <admin> plus (an)other element(s) TC=GI	If it is desirable to group one or more related data categories unambiguously with an <admin> data element, <adminGrp> . . . </adminGrp> can be used to delimit all those items that are associated with the administrative data element and do not necessarily pertain to the rest of the terminological entry. Not all <admin> instances in a file need to be identified by <adminGrp> if no additional elements are to be grouped with any given administrative element.<adminGrp> can be used with any type of <admin> data element as outlined in these charts. Only one <admin> element can be contained in an <adminGrp>, but more than one <adminGrp> can be contained in an <ntig>. <termEntry> <langSet lang=en> <ntig><termGrp><term>adhesive</term> <termNote type='termType'>preferred term</termNote> </termGrp></ntig> <ntig lang=en><termGrp><term>glue</term> <termNote type='termType'>deprecated term</termNote> </termGrp></ntig></langSet> <ntig lang=fr><termGrp><term>adhésif </term><termNote type='termType'>preferred term</termNote> </termGrp> <descripGrp><descrip type='directionality'>monodirectional </descrip><note>"Glue" is deprecated for English. Use "adhesive".</note> </descripGrp></ntig> <adminGrp><admin type='originator'>TC 61</admin> <note>Liaison with Working Group for coatings.</note> </adminGrp></ntig> </termEntry

Table A.3 MARTIF data category representation
Group 4: Function-related markup categories
Subgroup 11: Organizational data categories, cont. 5

Position No.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.11.2	Primary MARTIF elements			
A.11.2.1	term	<term>	A term TC=GI	See A.1.
A.11.2.2	descriptive information	<descrip type='...'>	Text or perm. instances TC=GI	See subgroups A.4-A.7.
A.11.2.3	administrative information	<admin type='...'>	Text or perm. instances TC=GI	See subgroups A.9-A.10
A.11.3	Special notes			
A.11.3.1	term note	<termNote type='...'>	Text or perm. instances TC=GI	See subgroups A.2 and A.3.
A.11.3.2	note on description	<descripNote>	Perm. instances TC=GI	Permissible instances for <descripNote> include: *translation* (see A.5) *types of definitions* (see A.5.1) *types of contexts* (see A.5.3)

Table A.3 MARTIF data category representation
Group 4: Function-related markup categories
Subgroup 11: Organizational data categories, cont. 6

Position No.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.11.3.3	administrative note	<adminNote>	Text TC=GI	Used to unambiguously distinguish non-concept-oriented note-type information from undifferentiated notes. <adminNote> is the only option to use if a note inside <admin> requires a picklist. The following example visualizes a work environment where different classes of users comment on term entries. Example: <termEntry> <adminGrp><admin type='userSuggestion'>Consult with subject field experts to clarify the relations between the English and German terms.</admin><adminNote type='jobTitle'>technical writer</adminNote><ptr type='originator' target='jdoe'> </adminGrp> <descrip type='subjectField'>mechanical engineering</descrip> <descripGrp><descrip type='definition'>a single observation made on one specimen</descrip> <descripNote>translation</descripNote></descripGrp> <langSet lang=en><ntig lang=en> <term>test</term> </ntig> <ntig lang=de> <term>Prüfung</term> </ntig></langSet> </termEntry>
A.11.4	back-matter elements			

Table A.3 MARTIF data category representation
Group 4: Function-related markup categories
Subgroup 11: Organizational data categories, cont. 7

Position No.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.11.4.1	reference object list	< refObjectList type = '…' >	< ref-Objects >	Back-matter elements for shared resources are grouped in lists according to types of referenced objects. These objects can include: < refObjectList type = 'bibl' > A list of entries encoded per Annex B, or a list of < xref > s pointing to external bibliographical resources. *Binary data files, i.e., bundled data files or < xref > s pointing to external data files per A.2.1.13-A.2.1.16 or A.5.5:* < refObjectList type = 'audio' > < refObjectList type = 'equation' > < refObjectList type = 'figure' > < refObjectList type = 'formula' > < refObjectList type = 'logicalExpression' > < refObjectList type = 'symbol' > < refObjectList type = 'otherBinaryData' > < refObjectList type = 'table' > < refObjectList type = 'video' > < refObjectList type = 'classificationSystem' > *Subject field classification system(s), either bundled in the back matter or linked to external files by < xref > s* < refObjectList type = 'conceptSystem' > *Tabular, graphic, or other representations of concept systems, either bundled in the back matter or linked to external files by < xref > s* < refObjectList type = 'geographical' > *Lists of country symbols and regional identifiers used* < refObjectList type = 'lexicalEntry' > *Links to related sense elements from lexical entries; these elements can reside in the back matter or be referenced with < xref > to external lexical database files.*

Table A.3 MARTIF data category representation
Group 4: Function-related markup categories
Subgroup 11: Organizational data categories, cont. 8

Position No.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.11.4.1, cont.	reference object list	< refObjectList type = '…' >	< ref-Objects >	< refObjectList type = 'namespaceID' > or < refObjectList type = 'URL' > < refObjectList type = 'FPI' > *Lists of name space identifiers, either mixed, or differentiated according to Uniform Resource Locators or Formal Public Identifiers* < refObjectList type = 'organization' > *A list of organizations and institutions cited, e.g., normative authorities, administrative entities, as well as clients* *Item types are not specified in this standard because they are highly environment-specific.They can include: name, email address, web-site address, phone, fax, address, etc.* < refObjectList type = 'person' > *A list of persons cited, e.g., in responsibility, origination, and source categories* *Item types are not specified in this standard because they are highly environment-specific.They can include: fname, surname, email address, web-site address, phone, fax, address, etc. Authorization information and other administrative categories can also be included here.* < refObjectList type = 'relatedDatabase' > *Other, non-terminological, databases cited in a terminology resource* < refObjectList type = 'relatedTermbase' > *Import and export-related terminological databases or distributed terminological databases, e.g., in World-Wide-Web environments* < refObjectList type = 'subset' > *Any subset of grouped data categories not classifiable as a person or organization*

Table A.3 MARTIF data category representation
Group 4: Function-related markup categories
Subgroup 11: Organizational data categories, cont. 9

Position No.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.11.4.1, cont.	reference object list	< refObjectList type = '…' >	< ref-Object > s	< refObjectList type = 'text' > *Frequently cited texts* < refObjectList type = 'thesaurus' > *Thesauri and documentary resources, either bundled in the back matter or linked to external files by < xref > s* < refObjectList type = 'WSD' > *Lists of writing system declarations used or cited* < refObjectList type = 'WSConversion' > *Lists of writing system conversion conventions, i.e., transliteration, transcription, and romanization protocols used or cited*
A.11.4.2	reference object	< refObject id = '…' >	< item-Set > s and < item > s	Reference objects contain individual entries in < refObjectList > s. Example 11 in this standard shows a sample < refObjectList > with < refObject > s. < refObject > inherits its type designation from the < refObjectList > in which it is enclosed.
A.11.4.3	item set	< itemSet type = '…' >	< item > s	Where individual items in a < refObject > must be grouped together , these items are enclosed in < itemSet > . EXAMPLE: < itemSet type = 'author' > < item type = 'fname' > Sarah Elaine < /item > < item type = 'surname' > Wiggens < /item > < /itemSet >
A.11.4.4	item group	< itemGrp type = '…' >	< item > plus < ptr > , < ref > or < note >	< itemGrp > is used when an < item > is associated with a < ptr > , < ref > , or < note > that pertains solely to that < item > .

Table A.3 MARTIF data category representation
Group 4: Function-related markup categories
Subgroup 11: Organizational data categories, cont. 10

Position No.	Data category name	MARTIF data category representation (Full normalized form)	Value	Examples
A.11.4.5	item	< item type = '…' >	Varies	Individual elements contained in back-matter < refObjects > are contained in < item > GIs. Values for bibliographic items are listed in Annex B. Values for other types of back-matter items are not the subject of this standard.
A.11.5	Special SGML elements			
A.11.5.1	highlighted material	< hi type = '…' > < hi type = '…' target = '…' >	Text	See *entailed term* (A.10.6.1). Also used to set off embedded gender references in multiword terms (A.2.2.2). < hi > can, but shall not necessarily, include a *target* attribute. It can also be used for other highlighting applications, such as to indicate the mandatory use of italics in terms (see A.5.8).
A.11.5.2	foreign text	< foreign lang = xx > where xx is a two or three-letter language symbol. See Clause 6 for additional information.	Text	See A.10.8.

Table A.3 MARTIF data category representation
Group 4: Function-related markup categories
Subgroup 12: Linkage

Position no.	Types of Links	MARTIF data category representation (Full normalized form)	Value	Examples
A.12	links	Theoretically, every element in a database can serve as a link, depending on the configuration of the local system. Thus linkage is fundamentally a feature of local database design. Some links, however, are commonly included as information units in data modeling, irrespective of whether they are implemented as functions of the database or as indicators to users that they must seek elsewhere for information. These data categories are included in their logical locations throughout the preceding charts. They are summarized here for purposes of clarification. See subclause 5.2.4 of this international standard and Example 8 for more information on links and specifically for instructions on when to use <ptr> and when to use <ref>. Annex C indicates those data categories that commonly use links.		
A.12.1	explicit links:	as per: <ptr type='crossReference' target='ID . . .'> or <ref type='crossReference' target='ID . . .'>	ptr: none ref: varies ['target' = ID of targeted item]	Links are used with the following examples in these charts: 10.18 cross-reference 10.18.1 see 10.18.2 see also
A.12.2	links between term entries using <ptr> and <ref>	<ptr type='homograph' target='ID . . .'> or <ref type='homograph' target='ID . . .'>	ptr: none ref: text	See example, A.10.18.5 Typical examples include: A.10.18.5 homograph A.10.18.6 antonym
A.12.3	links between term entries using <hi>	<hi type='entailedTerm'>	a term	See A.10.6.1
A.12.4	links to shared resources	<ptr type='...' target ='...'> where the target is a <refObject> in a <refObjectList> in the backmatter	...	See A.11.4. Shared resources can be entries contained in back matter, bundled data files, or <xref>s linking to external data files.

Example A.1—Concept system

Hypothetical, partial generic concept system represented in Subgroup A.7:

		Common name	International scientific term
superordinate concept	352.48	large cat	*Panthera*
coordinate concept	352.48.1	lion	*Panthera leo*
subject concept	352.48.2	tiger	*Panthera tigris*
subordinate concepts	352.48.2…	[other tigers]	
	352.48.2.4	Siberian tiger	

Example A.2—Thesaurus entry

NOISE (SOUND)

UF	NOISE HAZARDS	RT	ACOUSTICS
GS	ELASTIC WAVES		AEOLIAN NOISE
	. SOUND WAVES		AUDITORY STIMULI
	. . **NOISE (SOUND)**		. . .
	. . . AERODYNAMIC NOISE		FLIGHT HAZARDS
	. . . . BLADE SLAP NOISE		HYPERSONIC SHOCK
	. . . AIRCRAFT NOISE		JET BLAST EFFECTS
	. . . . BLADE SLAP NOISE		LOUDNESS
	. . . . JET AIRCRAFT NOISE		NOISE INJURIES
	. . . . SONIC BOOMS		. . .
	. . . ENGINE NOISE		
	. . . . ROCKET ENGINE NOISE		. . .
	. . . THERMAL NOISE		

Legend:

UF = Used For
GS = Generic Structure
RT = Related Term

Annex B
(informative)

Markup of bibliographic entries

The following three optional locations for reporting bibliographic data in MARTIF documents are specified in 8.4.4:

- In the term entry itself
- In bibliographic entries contained in the back matter
- In an external document

Regardless whether bibliographic information is included in the back element of the document or the < xref > element is used to link the MARTIF document to a bibliographic document conforming to one of the DTDs specified in ISO 12083, the bibliographic information included in the entries should be clearly differentiated using the element names specified in ISO 12083:1994, Annex B..

Any of these element names can be used. Nevertheless, the needs of documentation specialists with respect to bibliographic entries and those of terminologists are not always identical. Furthermore, ISO 12083 specifies elements for the markup of complete documents, not just bibliographic entries, which dictates some variation in practice from the concerns of terminologists documenting bibliographic information in terminological entries. Consequently, the following subset of the elements listed in ISO 12083 is most likely to be of use in terminological databases.

These elements function as generic identifiers in the ISO 12083 environment, where the list of bibliographic citations are enclosed in a < biblist > element, and each individual citation is enclosed in a < citation > element.

If the bibliographic information is included in the back matter of an ISO 12200 document, markup should conform to the conventions of this International Standard. In such a case, these names are used as the content of the attribute *type* in conjunction with the < item > generic identifier. The element < refObjectList type = 'bibl' > introduces the bibliographic list, < refObject > is used to introduce each citation, and < itemSet > is used to achieve the more extensive embedding that is possible in the ISO 12083 environment. < itemGrp > is used where it is desirable to enclose a < ptr > , < ref > , or < note > within an < item > . There is an example of this notation in Annex E, Example E.1.

Table B.1 Bibliographic data categories	
ISO 12200 Back	**ISO 12083**
B.1 bibliographic list EXAMPLE OF USAGE: < refObjectList type = 'bibl' >	EXAMPLE OF USAGE: < biblist > HOW TO USE: Back-matter list containing bibliographic citations.
B.2 bibliographic entry EXAMPLE OF USAGE: < refObject type = 'bibl' > NOTE: The *type* attribute is generally unnecessary in context because type is inherited from the type associated with the respective < refObjectList > .	EXAMPLE OF USAGE: < citation > HOW TO USE: Back-matter entry consisting of a bibliographic citation.
B.3 [advertisement] **advert** EXAMPLE OF USAGE: < refObject type = 'bibl' > < item type = 'category' > public relations document < /item > < /refObject > NOTE: See B.8 *category*; if used in a terminology database, this information will indicate that a cited work is an advertisement. In MARTIF, it is not a tag used to mark up actual advertising copy.	EXAMPLE OF USAGE: < advert > HOW TO USE: Used to mark up an advertisement or public notice within a serial publication.
B.4 article DESCRIPTION: An independent text forming a part of a publication. NOTE1: See ISO 5127/2:1983 for similar definition EXAMPLE OF USAGE: < refObject type = 'bibl' > < itemSet type = 'article' > < item type = 'title' > The New Standard Guide for Electronic Signatures < /item > < item type = 'category' > technical article < /item > < /itemSet > < /refObject > NOTE2: Articles can be categorized as *technical* or *popular*.	EXAMPLE OF USAGE: < article > < citation > < title > The New Standard Guide for Electronic Signatures NOTE: See 12083 for specific information on the omission of end tags with some elements. HOW TO USE: Used to mark up an article. Identifies a manuscript that follows the structure of the article document type. This element is the first tag in an article document. It may also be used in a serial document structure.
B.5 author DESCRIPTION: A person or corporate body responsible for the intellectual or artistic content of a document.	EXAMPLE OF USAGE: < author > < fname > Judith D. < surname > Alvarez

Table B.1 Bibliographic data categories	
ISO 12200 Back	**ISO 12083**
B.5 author, cont. NOTE: See ISO 5127/3a:1981 for similar definition EXAMPLE OF USAGE: < refObject type = 'bibl' > < itemSet type = 'author' > < item type = 'fname' > Judith D. < /item > < item type = 'surname' > Alvarez < /item > < /itemSet > < /refObject >	HOW TO USE: Specifies the information about an author such as first name, last name, degree, address, etc. NOTE: See the element *role* for further use of this element to differentiate functions other than that of the *writer* associated with a document.
B.6 [available] **avail** EXAMPLE OF USAGE: < refObject type = 'bibl' > < itemSet type = 'avail' > < item type = 'pubName' > Esoterica Publishing Co. < /item > < /itemSet > < itemSet type = 'avail' > < item type = 'orgname' > Cleveland Public Library, The White Collection < /item > < /itemSet > < /refObject >	EXAMPLE OF USAGE: 1) < avail > < pubname > Esoterica Publishing Co. 2) < avail > < orgname > Cleveland Public Library, The White Collection HOW TO USE: Specifies the source from which a work can be acquired or a location at which a work can be consulted if the work is not distributed by the named publisher.
B.7 book DESCRIPTION: A publication complete in one volume or complete or intended to be completed in a finite number of volumes. NOTE: See ISO 5127/2:1983 for similar definition EXAMPLE OF USAGE: < refObject type = 'bibl' > < itemSet type = 'book' > < item type = 'title' > The Concise Oxford Dictionary < /item > < /itemSet > < /refObject >	EXAMPLE OF USAGE: < book > < title > The Concise Oxford Dictionary HOW TO USE: Used to mark up a book. This element is the first tag in a book document. See *title*.
B.8 category DESCRIPTION: A type of publication. EXAMPLE OF USAGE: < refObject type = 'bibl' > < item type = 'category' > international standard < /item > < item type = 'title' > Terminology — Computer applications — Data categories < /refObject >	EXAMPLE OF USAGE: < citation > < category > international standard < title > Terminology — Computer applications — Data categories . . . HOW TO USE: Specifies the category that the work belongs to.

Table B.1 Bibliographic data categories	
ISO 12200 Back	**ISO 12083**
B.8 category, cont. NOTE: In terminology management, categories can include: *article (popular literature)* *article (technical literature)* *research report* *glossary* *lexicon* *grey literature* *manual* *patent document* *normative document* *standard* *international standard* *regional standard* *national standard* *periodical* *provincial standard* *prestandard* *technical specification* *code of practice* *regulation* *technical regulation* *legal document* *law* *public relations document*	
B. 9 citation DESCRIPTION: A reference to a book, article or other source. Equivalent to *bibliographical entry*. EXAMPLE OF USAGE: See the extended example that follows these charts.	EXAMPLE OF USAGE: See the extended example that follows these charts. HOW TO USE: Specifies a citation within a bibliographic list.
B.10 city DESCRIPTION: A place where the office of the publisher is situated, or failing this, the place of the organization acting for it. NOTE: See ISO 5127/3a:1981 for similar definition. EXAMPLE OF USAGE: < refObject type = 'bibl' > … < item type = 'city' > Geneva < /item > < /refObject >	EXAMPLE OF USAGE: < city > Geneva HOW TO USE: Specifies the name of the city.

Table B.1 Bibliographic data categories

ISO 12200 Back	ISO 12083
B.11 CODEN FULLFORM: **code number** (for periodicals) DESCRIPTION: A concise, unique, alphanumeric code assigned to serial and monographic publications and used as an unambiguous, permanent identifier. EXAMPLE OF USAGE: < refObject type = 'bibl' > < itemSet type = 'periodical' > < item type = 'sertitle' > Photo-Chemistry and Photo-Biology < /item > < item type = 'CODEN' > PHCBAP < /item > < /itemSet > < /refObject >	EXAMPLE OF USAGE: < sertitle > Photo-Chemistry and Photo-Biology < CODEN > PHCBAP HOW TO USE: Specifies the CODEN.
B.12 [corporate author] **corpauth** EXAMPLE OF USAGE: < refObject type = 'bibl' > < itemSet type = 'corpauth' > < item type = 'orgname' > American Association for the Advancement of Science < /item > < /itemSet > < /refObject >	EXAMPLE OF USAGE: < corpauth > < orgname > American Association for the Advancement of Science SHORT DESCRIPTION: corporate author HOW TO USE: Specifies the organization responsible for the creation of all or some of the intellectual or artistic content of the work.
B.13 [copyright] **cpyrt** DESCRIPTION: The exclusive legal right granted for a specified period to an author designer, etc. or another appointed person, to print, publish, perform, film, or record original literary, artistic, or musical material. EXAMPLE OF USAGE: See **cpyrtnme**	EXAMPLE OF USAGE: See **cpyrtnme** HOW TO USE: Begins the copyright notice for the document.
B.14 [copyright name] **cpyrtnme** EXAMPLE OF USAGE: < refObject type = 'bibl' > < itemSet type = 'cpyrt' > < item type = 'cpyrtnme' > International Organization for Standardization < /item > < /itemSet > < /refObject >	EXAMPLE OF USAGE: < cpyrt > < cpyrtnme > International Organization for Standardization HOW TO USE: Specifies the name of the copyright holder at the time of publication.

Table B.1 Bibliographic data categories	
ISO 12200 Back	**ISO 12083**
B.15 country DESCRIPTION: A country in which a document is published. EXAMPLE OF USAGE: < refObject type = 'bibl' > < itemSet > < item = 'city' > Oxford, Ohio < /item > < item type = 'country' > United States of America < /item > < /itemSet > < /refObject >	EXAMPLE OF USAGE: < country > United States of America HOW TO USE: Specifies the country. NOTE: The country name is frequently omitted from a bibliographic reference unless required for clarification.
B.16 date [of publication] DESCRIPTION: The indication of the year, and if necessary, of the month and day of publication. NOTE1: See ISO 5127/3a:1981 for similar definition EXAMPLE OF USAGE: < refObject type = 'bibl' > < item type = 'date' > 1995-10-02 < /item > < /refObject > NOTE2: All conditions that apply to the content of the < date > GI in 12200 apply for bibliographic entries as well.	EXAMPLE OF USAGE: < date > 1995-10-02 HOW TO USE: Begins a date. . . . A date entered in a citation is the publication date.
B.17 edition DESCRIPTION: The whole set of copies of a document produced from one composition or from a single copy used as a master. NOTE: See ISO 5127/3a:1981 for similar definition EXAMPLE OF USAGE: < refObject type = 'bibl' > < item type = 'edition' > Third edition < /item > < /refObject >	EXAMPLE OF USAGE: < edition > Third edition HOW TO USE: Specifies the edition statement for the document.
B.18 editor DESCRIPTION: An organization or person responsible for the preparation for publication of a document from the point of view of its intellectual content. EXAMPLE OF USAGE: See *role*. NOTE: In terminological databases, *editor* is frequently an independent data category. ISO 12083 treats it as a picklist item used with the *role* category.	NOTE: See *role*.

Table B.1 Bibliographic data categories	
ISO 12200 Back	**ISO 12083**
B.19 extent DESCRIPTION: The number of pages in a work. EXAMPLE OF USAGE: < refObject type = 'bibl' > < item type = 'extent' > 516 < /item > < /refObject >	EXAMPLE OF USAGE: < extent > 516 HOW TO USE: Specifies the extent of the work, specifically the number of pages.
B.20 first name DESCRIPTION: The given name of an individual. EXAMPLE OF USAGE: See B.5 *author*.	EXAMPLE OF USAGE: < fname > NOTE: See B.5, *author* for example.
B.21 glossary DESCRIPTION: A terminological dictionary containing the terminology of a specific subject field or of related fields and based on terminology work. NOTE1: See ISO 1087:1990 for similar definition EXAMPLE OF USAGE: < refObject type = 'bibl' > < item type = 'glossary' > Appendix A: Glossary < /item > < /refObject > NOTE: See also B.8, *category*.	EXAMPLE OF USAGE: < glossary > < title > Appendix A: Glossary HOW TO USE: Markup used to specify the glossary section. The glossary may be an alphabetic listing of unusual, obsolete, dialectical, or technical terms, all concerned with a particular subject or area of interest.
B.22 ISBN DESCRIPTION: The internationally recognized unique standard number assigned to each edition of a book or other monographic publication for identification purposes. EXAMPLE OF USAGE: < refObject type = 'bibl' > < itemSet type = 'book' > < item type = 'title' > The Concise Oxford Dictionary < /item > < item type = 'isbn' > 0-19-862000-1 < /item > < /itemSet > < /refObject >	EXAMPLE OF USAGE: < book > < title > The Concise Oxford Dictionary < isbn > 0-19-862000-1 HOW TO USE: Specifies the International Standard Book Number (ISBN). The ISBN is a four part, ten character code that provides title identification of a specific nonserial publication issued by a particular publisher.
B.23 ISSN DESCRIPTION: The internationally recognized unique standard number assigned to a serial for identification purposes.	EXAMPLE OF USAGE: < book > < sertitle > The ATA Annual Series < issn > 0890-4111

Table B.1 Bibliographic data categories	
ISO 12200 Back	**ISO 12083**
B.23 ISSN, cont. EXAMPLE OF USAGE: < refObject type = 'bibl' > < item type = 'sertitle' > The ATA Annual Series < /item > < item type = 'issn' > 0890-4111 < /item > < /refObject >	HOW TO USE: Specifies the ISSN number. The International Standard Serial Number is an eight character code that provides title identification of serial publications.
B.24 [issue number] **issueno** DESCRIPTION: The number of an element of a document published over a period of time. NOTE: See ISO 5127/3a:1981 for similar definition. EXAMPLE OF USAGE: < refObject type = 'bibl' > < item type = 'issueno' > 4 < /item > < /refObject >	EXAMPLE OF USAGE: < issueno > 4 HOW TO USE: Specifies the number of the issue.
B.25 [Library of Congress card number] **lccardno** EXAMPLE OF USAGE: < refObject type = 'bibl' > < itemSet type = 'book' > < item type = 'title' > Webster's New World Dictionary of the American Language < /item > < item type = 'lccardno' > 80-66480 < /item > < /itemSet > < /refObject >	EXAMPLE OF USAGE: < book > < title > Webster's New World Dictionary of the American Language < lccardno > 80-66480 HOW TO USE: Specifies the Library of Congress card number. This provides access to a complete catalog record for the work.
B.26 [organization name] **orgname** DESCRIPTION: The name of an association, business or other systematically structured entity. EXAMPLE OF USAGE: < refObject type = 'bibl' > < itemSet type = '[optional]' > < item type = 'orgname' > The International Electrical Commission < /item > < /itemSet > < /refObject >	EXAMPLE OF USAGE: < orgname > The International Electrical Commission HOW TO USE: Specifies the organization's name. NOTE: Most frequently contained inside other elements (see ISO 12083).
B.27 [other information] **othinfo** NOTE: Items sometimes used in bibliographic citations included in terminology databases, but not treated in ISO 12083 are likely candidates for othinfo.	HOW TO USE: Specifies other miscellaneous information within a citation.

Table B.1 Bibliographic data categories	
ISO 12200 Back	**ISO 12083**
B.28 pages DESCRIPTION: **(page)** One side of a leaf of a document. NOTE: See ISO 5127/3a:1981 for similar definition. EXAMPLE OF USAGE: < refObject type = 'bibl' > < item type = 'pages' > 32-41 < /item > < /refObject >	EXAMPLE OF USAGE: < pages > 32-41 HOW TO USE: Specifies the page number of the reference, for example, use within a bibliographic reference.
B.29 [publisher name] **pubname** DESCRIPTION: The name of the person or organization responsible for the production and dissemination of a document. NOTE: See ISO 5127/3a:1981 for similar definition. EXAMPLE OF USAGE: < refObject type = 'bibl' > < itemSet type = 'pubname' > < item type = 'orgname' > Oxford University Press < /item > < /itemSet > < /refObject >	EXAMPLE OF USAGE: < pubname > < orgname > Oxford University Press HOW TO USE: Specifies the publisher's name.
B.30 [report identifier] **reportid** DESCRIPTION: Complete formatted alphanumeric designation uniquely identifying a report. EXAMPLE OF USAGE: < refObject type = 'bibl' > < item type = 'reportid' > Technical Report TR-531 < /item > < /refObject >	EXAMPLE OF USAGE: < reportid > Technical Report TR-531 HOW TO USE: Specifies the report identifier. This is the complete, formatted alphanumeric designation uniquely identifying a report.
B.31 role DESCRIPTION: EXAMPLE OF USAGE: 1) < refObject type = 'bibl' > < itemSet type = 'author' > < item type = 'fname' > Judith D. < /item >	EXAMPLE OF USAGE: 1) < author > < fname > Judith D. < surname > Alvarez < role > editor < /author >

Table B.1 Bibliographic data categories	
ISO 12200 Back	**ISO 12083**
B.31 role, cont. < item type = 'surname' > Alvarez < /item > < item type = 'role' > editor < /item > < /itemSet > < /refObject > 2) < refObject type = 'bibl' > < itemSet type = 'author' > < item type = 'role' > person cited as the source of information < /item > < item type = 'surname' > Green < /item > < item type = 'fname' > Joe < /item > < /itemSet > < /refObject >	2) < author > < role > person cited as the source of information < /role > < surname > Green < /surname > < fname > Joe < /fname > < /author > HOW TO USE: Identifies the person's contribution to the work or a corporation's contribution to the work.
B.32 [serial title] **sertitle** EXAMPLE OF USAGE: See example for ISSN.	EXAMPLE OF USAGE: See example for ISSN. HOW TO USE: Title, (monographic) series.
B.33 surname DESCRIPTION: The hereditary name of an individual. EXAMPLE OF USAGE: < refObject type = 'bibl' > < itemSet type = 'author' > < item type = 'fname' > Carl Gustav < /item > < item type = 'surname' > Jung < /item > < /itemSet > < /refObject >	EXAMPLE OF USAGE: < author > < fname > Carl Gustav < surname > Jung < /author > HOW TO USE: Specifies the surname (last name) of an individual. NOTE: The implied definition in 12083 is implicitly Eurocentric: surnames or hereditary names do not always appear last in all languages.
B.34 title DESCRIPTION: The word or phrase, usually appearing on the document, by which it is convenient to refer to it, which may be used to identify it, and which often (though not invariably) distinguishes it from any other document. EXAMPLE OF USAGE: < refObject type = 'bibl' > < itemSet type = 'book' > < item type = 'title' > The Concise Oxford Dictionary < /item > < /itemSet > < /refObject >	EXAMPLE OF USAGE: < book > < title > The Concise Oxford Dictionary HOW TO USE: Begins a title. The type of title depends on the location of the tag in the data stream, e.g., a tag embedded in an 'article' element is an article title.

Table B.1 Bibliographic data categories	
ISO 12200 Back	**ISO 12083**
B.35 volid DESCRIPTION: Identifier for a material unit assembling a certain number of leaves under one cover to form a whole or part of a set. NOTE: See ISO 5127/3a:1981 for similar definition. EXAMPLE OF USAGE: < refObject type = 'bibl' > < item type = 'volid' > III < /item > < /refObject >	EXAMPLE OF USAGE: < volid > III HOW TO USE: Specifies the volume number.

Sample full citations

Example B.1: Traditional bibliographic notation (presentational markup)

Melby, A., G. Budin, G. Shreve and S.E. Wright. 1994. "Base Tag Set for Terminological Databases". *Guidelines for Electronic Text Encoding and Interchange*, TEI P3, C.M. Sperberg-McQueen and L. Burnard (eds). Chicago and Oxford: ACH, ACL, ALLC, 371-390.

Example B.2: Sample notation according to ISO 12083

```
< biblist >
< citation >

< article >
< auth > < surname > Melby < fname > Alan K. < /auth >
< auth > < surname > Budin < fname > Gerhard < /auth >
< auth > < surname > Shreve < fname > Gregory < /auth >
< auth > < surname > Wright < fname > Sue E. < /auth >
< title > Base Tag Set for Terminological Databases < /title >
< pages > 371-391
< /article >

< book >
< auth > < role > editor < surname > Sperberg-McQueen < fname > Michael < /auth >
< auth > < role > editor < surname > Burnard < fname > Lou < /auth >
< title > Guidelines for the Electronic Text Encoding and Interchange < /title >
< edition > TEI P3 < /edition < volid > I < /volid >
< /book >

< city > Chicago and Oxford < /city >
< pubname > < orgname > ACH < /orgname > < orgname > ACL < /orgname >
```

< orgname > ALLC < /orgname > < /pubname >

< /citation >
< /biblist >

Example B.3: Sample notation according to ISO 12200

< back >

< refObjectList type = 'bibl' >

< refObject >
< itemSet type = 'article' > < item type = 'title' > Base Tag Set for Terminological Databases < /item > < /itemSet >
< itemSet type = 'author' > < item type = 'surname' > Melby < /item > < item type = 'fname' > Alan K. < /item > < /itemSet >
< itemSet type = 'author' > < item type = 'surname' > Budin < /item >
< item type = 'fname' > Gerhard < /item > < /itemSet >
< itemSet type = 'author' > < item type = 'surname' > Shreve < /item >
< item type = 'fname' > Gregory < /item > < /itemSet >
< itemSet type = 'author' > < item type = 'surname' > Wright < /item >
< item type = 'fname' > Sue E. < /item > < /itemSet >
< item type = 'pages' > 371-391 < /item >
< itemSet type = 'book' > < item type = 'title' > Guidelines for the Electronic Text Encoding and Interchange < /item > < /itemSet >
< itemSet type = 'author' > < item type = 'role' > editor < /item >
< item type = 'surname' > Sperberg-McQueen < /item >
< item type = 'fname' > Michael < /item > < /itemSet >
< itemSet type = 'author' > < item type = 'role' > editor < /item >
< item type = 'surname' > Burnard < /item > < item type = 'fname' > Lou < /item > < /itemSet >
< item type = 'edition' > TEI P3 < /item >
< item type = 'volid' > I < /item >
< item type = 'city' > Chicago and Oxford < /item >
< itemSet type = 'pubname' > < item type = 'orgname' > ACH < /item >
< item type = 'orgname' > ACL < /item > < item type = 'orgname' > ALLC < /item >
< /itemSet >

< /refObject >

< /refObjectList >

< /back >

Annex C
(informative)

Data categories listed according to associated Generic Identifiers (GIs) and attributes

Annex A of this International Standard (i.e., ISO 12200:1999) specifies the MARTIF markup that is used for representing data categories for the interchange of data among machine-readable terminology databases. These data category names and their definitions are specified in Annex A of International Standard 12620:1999, while Annex B of that standard recommends data category names for use in bibliographical entries included in terminological databases, and Annex C provides a systematic listing of all data category names. In these various resources, the data categories have been arranged according to thematic considerations and long-standing precedents in terminology database management. With respect to MARTIF, however, the assignment of generic identifiers and SGML attributes reflects the behavior of data categories in the SGML environment and in some cases results in nonuniform patterns within certain parts of the ordering scheme used in ISO 12620. As a consequence, some variation exists with respect to the assignment of GIs and attributes. The following lists are designed to clarify these assignments. Data categories are classified according to their respective GIs listed alphabetically, followed by those attributes to which specific data categories are assigned.

* = Data categories that can be alternately used with < ptr > and < ref >
\+ = < termNote > data categories that can be alternately used with < descrip >
† = Data categories that can be alternately used with < hi >
‡ = < descrip > data categories that can be alternately used with < termNote >

GENERIC IDENTIFIERS (GIs)

< admin > GI

A.9 documentary language[1]
A.9.1 thesaurus name*
A.9.2 thesaurus descriptor*
A.9.2.1 top term*
A.9.2.2 broader term*
A.9.2.3 narrower term*
A.9.2.4 related term*
A.9.3 nondescriptor*
A.9.4 keyword*
A.9.5 index heading*

A.10.1 terminology management transactions
A.10.2 terminology management functions

[But NOT A.10.2.1; see < date >]

A.10.2.2 responsibility[2]
A.10.2.2.1 originator*
A.10.2.2.2 inputter*
A.10.2.2.3 updater*
A.10.2.2.4 checker*
A.10.2.2.5 approver*
A.10.2.2.6 user*
A.10.2.2.7 withdrawer*
A.10.2.2.8 exporter*
A.10.2.2.9 importer*
A.10.2.2.10 subset owner*

A.10.3 subset identifier*[3]
A.10.3.1 customer subset*
A.10.3.2 initial customer subset*
A.10.3.3 project subset*
A.10.3.4 initial project subset*
A.10.3.5 product subset*
A.10.3.6 application subset*
A.10.3.7 environment subset*
A.10.3.8 business unit subset*
A.10.3.9 security subset*

[But NOT A.10.4 authorization information; see < item >]

A.10.5 user suggestion

A.10.6 administrative term qualifiers

[But NOT A.10.6.1 entailed term; see < hi >]

A.10.6.2 sort key
A.10.6.3 search term

[But NOT A.10.7; see *lang* attribute]

[But NOT A.10.8 see < foreign >]

A.10.9 collating sequence
A.10.10 entry type
A.10.11 element working status
A.10.12 target database*[4]
A.10.13 entry source*

[But NOT A.10.14 - A.10.17;
see *id* attribute]

[But NOT A.10.18 - A.10.18.2;
see < ptr > and < ref >]
A.10.18.3 inverted term*[5]
A.10.18.4 permuted term*
A.10.18.5 homograph*
A.10.18.6 antonym*

A.10.19 source[6]

[But NOT A.10.21; see < ptr > and < ref >

A.10.22 originating entity
A.10.22.1 originating person*[7]
A.10.22.2 originating institution*[8]
A.10.22.3 originating database*[4]

< date > GI

A.10.2.1 date[9]
A.10.2.1.1. origination date
A.10.2.1.2 input date
A.10.2.1.3 modification date
A.10.2.1.4 check date
A.10.2.1.5 approval date
A.10.2.1.6 withdrawal date
A.10.2.1.7 standardization date
A.10.2.1.8 exportation date
A.10.2.1.9 importation date

< descrip > GI

A.2.1.18 phraseological unit + [10]
A.2.1.18.1 collocation +
A.2.1.18.2 set-phrase +
A.2.1.18.3 synonymous phrase +
A.2.1.19 standard text + [11]

A.4 subject field *[12]
A.4.1 classification system*
A.4.2 classification number*

A.5 concept-related description[10]
A.5.1 definition
A.5.2 explanation
A.5.3 context‡[13]
A.5.4 example

[But NOT A.5.5, nontextual illustrations

See < ptr > and < ref > .]

A.5.6 unit
A.5.7 range
A.5.8 characteristic

A.6 concept relation
A.6.1 generic relation
A.6.2 partitive relation
A.6.3 sequential relation
A.6.3.1 temporal relation
A.6.3.2 spatial relation
A.6.4 associative relation

A.7 conceptual structures[14]
A.7.1 concept system*
A.7.2 concept position*
A.7.2.1 broader concept*
A.7.2.2 superordinate concept*
A.7.2.3 subordinate concept*
A.7.2.4 coordinate concept*
A.7.2.5 related concept*

< foreign > GI

A.10.8 foreign text

< hi > GI [15]

A.1 (italics in a term)
A.2.2.2 grammatical gender
A.10.6.1 entailed term

< item > GI[16]

All bibliographic elements (see Annex B)

A.10.4 authorization information[2]
A.10.4.1 authorization function
A.10.4.2 authorization identifier
A.10.4.3 authorization password
A.10.4.4 job title

< note > GI

A.8 note

< ptr > and < ref > GIs

A.2.1.3 quasi-synonym[17]
A.2.1.9 variant[18]
A.2.1.10 transliterated form
A.2.1.11 transcribed form
A.2.1.12 romanized form
A.2.1.13 symbol[19]
A.2.1.14 formula
A.2.1.15 equation
A.2.1.16 logical expression

A.2.9.1 normative authorization[20]