

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Multimedia systems and equipment – Multimedia e-publishing and e-books –
Interchange format for e-dictionaries**

**Systèmes et appareils multimédias – Publication et livres électroniques
multimédias – Format d'échange pour les dictionnaires électroniques**

IEC 62605:2016

<https://standards.iteh.ai/catalog/standards/iec/flufcf30-7d4b-4144-a6f2-9502f113e645/iec-62605-2016>



THIS PUBLICATION IS COPYRIGHT PROTECTED
Copyright © 2016 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

Droits de reproduction réservés. Sauf indication contraire, aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'IEC ou du Comité national de l'IEC du pays du demandeur. Si vous avez des questions sur le copyright de l'IEC ou si vous désirez obtenir des droits supplémentaires sur cette publication, utilisez les coordonnées ci-après ou contactez le Comité national de l'IEC de votre pays de résidence.

IEC Secretariat
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigendum or an amendment might have been published.

IEC publications search - webstore.iec.ch/advsearchform

The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee, ...). It also gives information on projects, replaced and withdrawn publications.

IEC Products & Services Portal - products.iec.ch

Discover our powerful search engine and read freely all the publications previews. With a subscription you will always have access to up to date content tailored to your needs.

IEC Just Published - webstore.iec.ch/justpublished

Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and once a month by email.

Electropedia - www.electropedia.org

The world's leading online dictionary on electrotechnology, containing more than 22 300 terminological entries in English and French, with equivalent terms in 19 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

IEC Customer Service Centre - webstore.iec.ch/csc

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: sales@iec.ch.

A propos de l'IEC

La Commission Electrotechnique Internationale (IEC) est la première organisation mondiale qui élabore et publie des Normes internationales pour tout ce qui a trait à l'électricité, à l'électronique et aux technologies apparentées.

A propos des publications IEC

Le contenu technique des publications IEC est constamment revu. Veuillez vous assurer que vous possédez l'édition la plus récente, un corrigendum ou amendement peut avoir été publié.

Recherche de publications IEC -

webstore.iec.ch/advsearchform

La recherche avancée permet de trouver des publications IEC en utilisant différents critères (numéro de référence, texte, comité d'études, ...). Elle donne aussi des informations sur les projets et les publications remplacées ou retirées.

IEC Products & Services Portal - products.iec.ch

Découvrez notre puissant moteur de recherche et consultez gratuitement tous les aperçus des publications. Avec un abonnement, vous aurez toujours accès à un contenu à jour adapté à vos besoins.

IEC Just Published - webstore.iec.ch/justpublished

Restez informé sur les nouvelles publications IEC. Just Published détaille les nouvelles publications parues. Disponible en ligne et une fois par mois par email.

Electropedia - www.electropedia.org

Le premier dictionnaire d'électrotechnologie en ligne au monde, avec plus de 22 300 articles terminologiques en anglais et en français, ainsi que les termes équivalents dans 19 langues additionnelles. Egalement appelé Vocabulaire Electrotechnique International (IEV) en ligne.

Service Clients - webstore.iec.ch/csc

Si vous désirez nous donner des commentaires sur cette publication ou si vous avez des questions contactez-nous: sales@iec.ch.

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Multimedia systems and equipment – Multimedia e-publishing and e-books –
Interchange format for e-dictionaries**

**Systèmes et appareils multimédias – Publication et livres électroniques
multimédias – Format d'échange pour les dictionnaires électroniques**

IEC 62605:2016

<https://standards.iteh.ai/catalog/standard/iec/f1dfcf30-7d4b-4144-a6f2-9502f113e645/iec-62605-2016>

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 33.160.60; 35.240.20; 35.240.30

ISBN 978-2-8322-0000-0

**Warning! Make sure that you obtained this publication from an authorized distributor.
Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.**

CONTENTS

FOREWORD	5
INTRODUCTION	7
1 Scope	8
2 Normative references	8
3 Terms and definitions	8
4 Position and requirements for interchange format for e-dictionaries	8
4.1 Interchange format for e-dictionaries in contents creation/distribution model	8
4.2 Requirements for interchange format for e-dictionaries	9
5 File formats	9
6 Semantics	10
Annex A (normative) XMDF-LeXML format	11
A.1 General	11
A.2 Overview of the format's structure	11
A.3 Elements and attributes	12
A.3.1 General	12
A.3.2 Page_ID	12
A.3.3 Object_ID	12
A.3.4 Char_ID	12
A.3.5 Reading	12
A.3.6 Filename	13
A.3.7 Standard character	13
A.3.8 Standard character string	13
A.3.9 Extended character	14
A.3.10 Extended character string	14
A.3.11 External character	14
A.3.12 External character string	16
A.3.13 External extended character string	16
A.3.14 Coordinates	16
A.3.15 Polygonal_region	17
A.3.16 Color	17
A.3.17 Date	18
A.3.18 Time	18
A.3.19 Country	18
A.3.20 Personal_name	18
A.3.21 Organization_name	20
A.3.22 Address	20
A.3.23 Permission	22
A.3.24 Keyword	24
A.3.25 Telephone_number	24
A.3.26 Mail_address	25
A.4 Description format details	25
A.4.1 General	25
A.4.2 Book information modules <bvf>	26
A.4.3 Content management module <body_module>	41
A.4.4 Event info module <event_info>	59

A.4.5	Parts data module <parts_module>	66
A.4.6	Object instances	72
A.5	Available color names	119
A.6	Localization	120
A.6.1	Possible additions	120
A.6.2	Standard characters	120
A.6.3	Characters usable for reading	121
A.6.4	Line breaking methods	121
A.6.5	Sorting rules for <search_table_def>	122
A.6.6	Additional attributes for <enable_key_type>	123
A.6.7	Normalization methods for <key_normalization>	124
A.6.8	Character encoding conversions	124
A.7	Adaptation	124
A.8	Specification of the XMDF-LeXML format in the RELAX NG syntax	124
Annex B (normative)	LeXML format	160
B.1	General	160
B.2	Elements for content structure	160
B.2.1	Parameter entity definition	160
B.2.2	Root elements	162
B.2.3	headword-related elements	166
B.2.4	Main-text related elements	169
B.2.5	Subheadword related elements	173
B.2.6	Other block elements	178
B.2.7	Media related elements	182
B.2.8	Other structural elements	184
B.3	Inline elements	189
B.3.1	Labels	189
B.3.2	pronunciation/accent – related elements	191
B.3.3	Part-of-speech related and other elements	193
B.3.4	Other dictionary-specific elements	194
B.3.5	Text-decoration related elements	204
B.3.6	Typesetting-related elements	209
B.3.7	Other elements	211
B.4	Specification of the LeXML format in the DTD syntax	218
Bibliography	232
Figure 1	– Contents creation/distribution model	8
Figure 2	– Contents creation/distribution model (modified)	9
Figure 3	– Relationship between concepts	9
Figure A.1	– XML tree structure	11
Figure A.2	– Example of valign="middle"	74
Figure A.3	– Example of dropped capital	80
Figure A.4	– Left and right margin of a paragraph	80
Figure A.5	– Horizontal writing in vertical text	88
Figure A.6	– Ruby	89
Figure A.7	– Example of search page object instance rendering	115

Table A.1 – Base characters for reading 13

Table A.2 – Standard character set..... 13

Table A.3 – Usable characters for a telephone number 25

Table A.4 – Characters usable for email addresses 25

Table A.5 – Characters usable for the lookup key 58

Table A.6 – Color names 120

Table A.7 – Examples of additional standard character sets 121

Table A.8 – Example of additional characters usable for readings..... 121

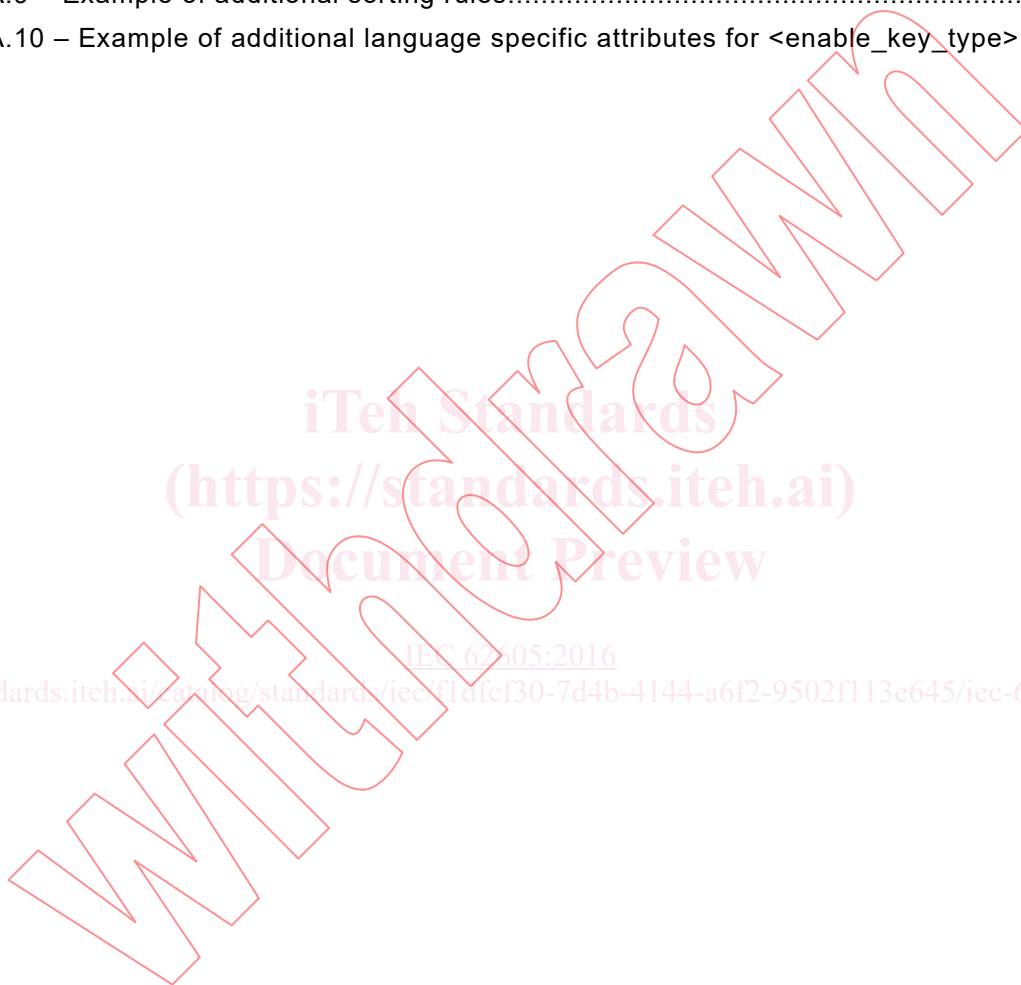
Table A.9 – Example of additional sorting rules..... 122

Table A.10 – Example of additional language specific attributes for <enable_key_type> 123

iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

IEC 62605:2016

<https://standards.iteh.ai/catalog/standards/iec/f1d1cf30-7d4b-4144-a6f2-9502f113e645/iec-62605-2016>



INTERNATIONAL ELECTROTECHNICAL COMMISSION

**MULTIMEDIA SYSTEMS AND EQUIPMENT –
MULTIMEDIA E-PUBLISHING AND E-BOOKS –
INTERCHANGE FORMAT FOR E-DICTIONARIES**

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.

International Standard IEC 62605 has been prepared by technical area 10: Multimedia e-publishing and e-book technologies, of IEC technical committee 100: Audio, video and multimedia systems and equipment.

This second edition cancels and replaces the first edition published in 2011. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition.

- a) Ref element is added to facilitate cross reference between entries.
- b) A new version of LeXML format, which is one of the base formats of the first edition, has been expanded and becomes Annex B. (The existing format becomes Annex A.)

The text of this standard is based on the following documents:

CDV	Report on voting
100/2430/CDV	100/2506/RVC

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

iTech Standards
(<https://standards.itih.ai>)
Document Preview

IEC 62605:2016

<https://standards.itih.ai/catalogue/standards/iec/flufcf30-7d4b-4144-a6f2-9502f113e645/iec-62605-2016>

INTRODUCTION

Markets for multimedia e-books and e-publishing require standardization of formats for e-book data interchange among associated people, authors, data preparers, publishers and readers. The formats are classified into submission format, interchange format and reader's format. The submission format supports an interaction between authors and data preparers. The reader's format depends on e-publishing equipment. The interchange format provides an interchange format for data preparers and publishers and therefore should be e-publishing equipment independent.

The International Electrotechnical Commission (IEC) draws attention to the fact that it is claimed that compliance with this document may involve the use of patents.

IEC takes no position concerning the evidence, validity and scope of this patent right.

The holder of this patent right has assured the IEC that he/she is willing to negotiate licences under reasonable and non-discriminatory terms and conditions with applicants throughout the world. In this respect, the statement of the holder of this patent right is registered with IEC. Information may be obtained from:

Sharp Corporation,
22-22 Nagaike-cho,
Abeno-ku,
Osaka 545-8522,
Japan

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights other than those identified above. IEC shall not be held responsible for identifying any or all such patent rights.

ISO (www.iso.org/patents) and IEC (<http://patents.iec.ch>) maintain on-line data bases of patents relevant to their standards. Users are encouraged to consult the data bases for the most up to date information concerning patents.

<https://standards.iteh.ai/catalog/standards/iec/62605-2016>
<https://standards.iteh.ai/catalog/standards/iec/11d1cf30-7d4b-4144-a6f2-9502f113e645/iec-62605-2016>

MULTIMEDIA SYSTEMS AND EQUIPMENT – MULTIMEDIA E-PUBLISHING AND E-BOOKS – INTERCHANGE FORMAT FOR E-DICTIONARIES

1 Scope

This International Standard specifies the interchange format for e-dictionaries among publishers, content creators and manufacturers.

This International Standard does not address the following aspects:

- data formats for reading devices;
- elements necessary for final print reproduction only;
- rendering issues related to physical devices;
- security issues such as DRM for documents.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC TS 62229:2006, *Multimedia systems and equipment – Multimedia e-publishing and e-book – Conceptual model for multimedia e-publishing*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

manufacturer

organization or person that manufactures hardware and/or software of the e-book

4 Position and requirements for interchange format for e-dictionaries

4.1 Interchange format for e-dictionaries in contents creation/distribution model

The conceptual model for multimedia e-publishing (IEC TS 62229) defines a contents creation/distribution model shown in Figure 1.

Author <--(1)--> Data preparer <--(2)--> Publisher --(3)--> Reader

IEC

Key

- (1) content data in submission format
- (2) content data in interchange format
- (3) content data in reader's format

Figure 1 – Contents creation/distribution model

It should be noted that the role of manufacturers of e-dictionary hardware and software overlaps that of the publisher in Figure 1. Therefore, a slightly modified model will be assumed for this International Standard, as shown in Figure 2.

Author <--(1)--> **Data preparer** <--(2)--> **Publisher (manufacturer)** --(3)--> **Reader**
IEC

Figure 2 – Contents creation/distribution model (modified)

This International Standard specifies the interchange format between data preparers and publishers, i.e. a format for (2) in Figure 2, though it may be used as a reader's format.

4.2 Requirements for interchange format for e-dictionaries

An interchange format for e-dictionaries needs to address the following.

- Description of keywords, links from the keywords to entries (link data) and the order of the entries.
- Description of articles for each entry (entry data). This includes text, image, and other multimedia functionalities generally required for e-books.
- Description of bibliographical data and other data. This should include the name of the author and the publisher, the title of the content and the explanatory note. The relationship between these concepts is visually represented in Figure 3.
- Description of contents written in various languages.

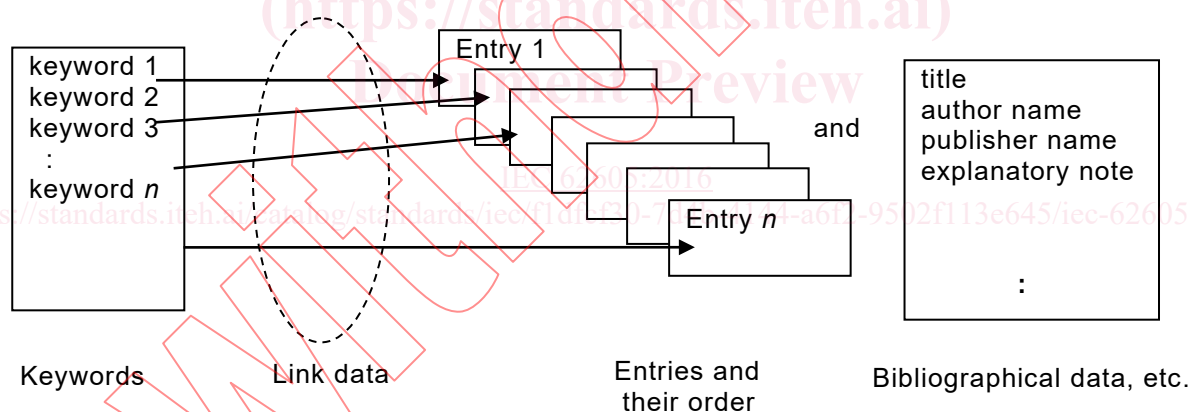


Figure 3 – Relationship between concepts

5 File formats

This International Standard defines two XML-based formats. One is based on XMDF (as described in IEC 62448:2013, Annex B) and LeXML. The format is hereafter called XMDF-LeXML format. The other is based solely on LeXML 3.0. They are presented in Annex A and Annex B, respectively.

NOTE LeXML is proposed by Digital ASSIST Ltd. Its original specifications are found at <http://www.d-assist.com/index.html> (in Japanese).

6 Semantics

Elements of the XMDF-LeXML format can be rendered in accordance with appropriate style specifications, which are outside the scope of this International Standard.

Withhold

iTech Standards
(<https://standards.itih.ai>)
Document Preview

[IEC 62605:2016](https://standards.itih.ai/catalogue/standards/iec/flufcf30-7d4b-4144-a6f2-9502f113e645/iec-62605-2016)

<https://standards.itih.ai/catalogue/standards/iec/flufcf30-7d4b-4144-a6f2-9502f113e645/iec-62605-2016>

Annex A (normative)

X MDF- LeXML format

A.1 General

The XMDF-LeXML format is an interchange format for e-dictionaries multimedia e-book data interchange, targeted at data preparers and publishers rather than the reader, with an emphasis on mobile devices as a target platform. Much like HTML, this format does not split the document in fixed pages, but determines the layout according to the viewer device's display size, the font in use, and so on. In this annex, such contents will be referred to as flowing content, as opposed to paged content.

A.2 Overview of the format's structure

Flowing contents are usually composed of several concatenated flows. This annex makes no particular requirement concerning the way the flowing content should be split into individual flows. This decision is left to the data preparer, to accommodate the various types of contents. For instance, a newspaper may have one flow per article, a novel one per chapter, and so on. It is also possible not to split the content, and to have only one flow. However, it should be noted that particularly large flows, or an extremely large number of flows, may impact on runtime performance, depending on the specific version of the viewer in use, the available memory, and so on.

The XML tree structure of the format is shown in Figure A.1.

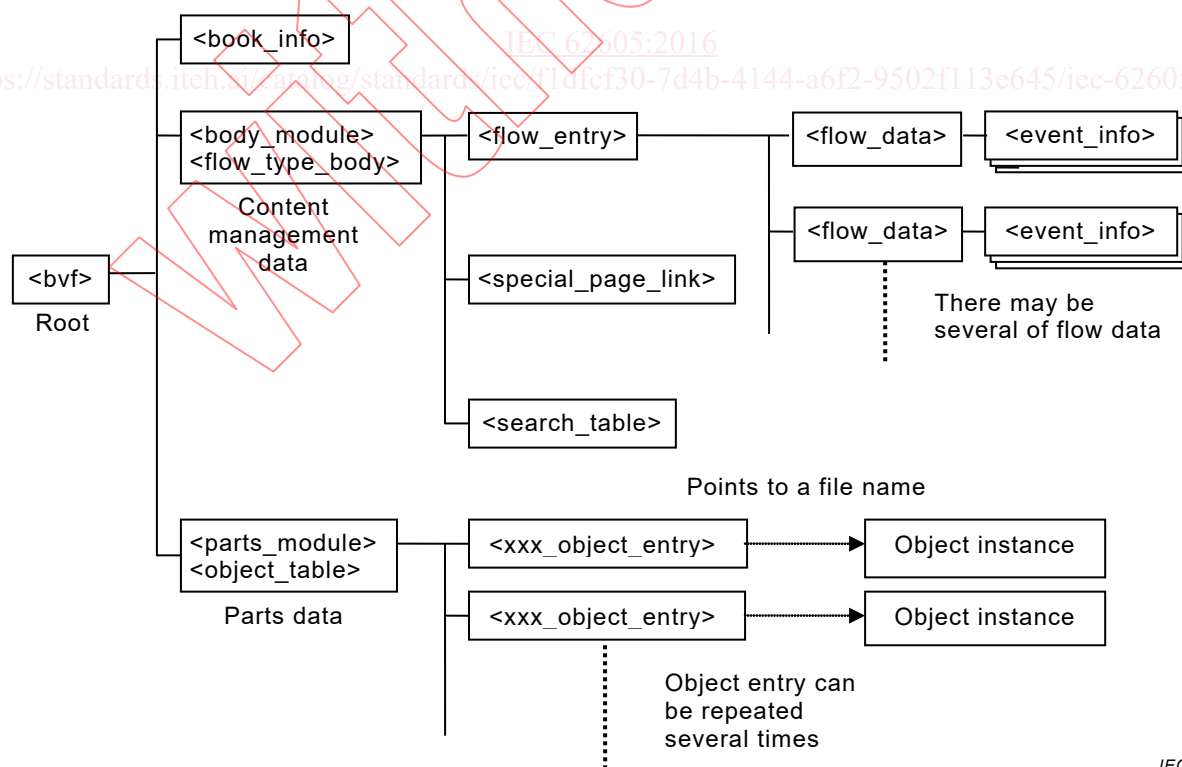


Figure A.1 – XML tree structure

The actual contents of each flow, in other words, what will be displayed by the viewer, is recorded in the object instance. The object instance is registered in `object_entry`, and associated with an ID number and other auxiliary data, turning it into playable/displayable data. `Flow_data` determines its content by pointing at such registered objects. In addition, information on functionalities such as page link is recorded in `event_info`.

The main part of Annex A is generic, and may be used for any country and language. However, some parts may have language specific behavior. Localization-related issues are detailed in Clause A.6.

A.3 Elements and attributes

A.3.1 General

The different types of values that may be used in the various elements or attributes are explained below. The elements and attributes detailed below will be valid throughout this annex, and will be referenced by other constructs. In the following explanations, alphanumeric characters refer to numerals from 0 to 9 and alphabetic letters from a to z and A to Z.

A.3.2 Page_ID

`Page_ID` specifies a unique identification number for the flow data of the flowing contents. It is a string starting by the "PG" characters, followed by alphanumeric characters.

Example:

```
<flow_data flow_id="PG0002" ... />
```

A.3.3 Object_ID

`Object_ID` specifies a unique identification number for objects used in the flowing contents. It is a string starting by the "OB" characters, followed by alphanumeric characters.

Example:

```
<dynamic_text_object_entry id="OB0ue4".../>
```

A.3.4 Char_ID

`Char_ID` specifies an identification number for positions (character strings, etc.) within text and dictionary data objects. It is an alphanumeric string which is to be given uniquely in the text (see A.4.6.2) and dictionary data object instance (see A.4.6.3). Char IDs with the same value in different object instances are regarded as separate and don't affect each other.

Example:

```
<trigger_pointer id="OB29s0/CR0de4"/>
Click<char_id char_id="CR0001">here</char_id>for details.
```

A.3.5 Reading

For sorting purposes, reading may be useful to specify the reading of each word. Restricting the characters allowed for this purpose to a limited set makes it easier to define the sorting method. Such characters should be determined on a per language basis. All languages can