



IEC 62605

Edition 2.0 2016-02

# INTERNATIONAL STANDARD

---

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

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

---

ICS 33.160.60; 35.240.20; 35.240.30

ISBN 978-2-8322-3102-9

**Warning! Make sure that you obtained this publication from an authorized distributor.**

## 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 .....	174
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.....	190
B.3.1	Labels .....	190
B.3.2	pronunciation/accent – related elements .....	192
B.3.3	Part-of-speech related and other elements .....	194
B.3.4	Other dictionary-specific elements .....	195
B.3.5	Text-decoration related elements.....	205
B.3.6	Typesetting-related elements .....	210
B.3.7	Other elements .....	213
B.4	Specification of the LeXML format in the DTD syntax .....	220
Bibliography	.....	234
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

## 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.

A bilingual version of this publication may be issued at a later date.

## 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](http://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.

# 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*