

INTERNATIONAL STANDARD

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





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.

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

Tel.: +41 22 919 02 11
Fax: +41 22 919 03 00
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 corrigenda or an amendment might have been published.

IEC Catalogue - webstore.iec.ch/catalogue

The stand-alone application for consulting the entire bibliographical information on IEC International Standards, Technical Specifications, Technical Reports and other documents. Available for PC, Mac OS, Android Tablets and iPad.

IEC publications search - www.iec.ch/searchpub

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 It also gives information on projects, replaced and withdrawn publications.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 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 also once a month by email.

Electropedia - www.electropedia.org

The world's leading online dictionary of electronic and electrical terms containing 20 000 terms and definitions in English and French, with equivalent terms in 15 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

IEC Glossary - std.iec.ch/glossary

65 000 electrotechnical terminology entries in English and French extracted from the Terms and Definitions clause of IEC publications issued since 2002. Some entries have been collected from earlier publications of IEC TC 37, 77, 86 and CISPR.

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: csc@iec.ch.



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) 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*

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