

INTERNATIONAL STANDARD

IEC 62448

First edition
2007-04

Multimedia systems and equipment – Multimedia E-Publishing and E-Books – Generic format for E-Publishing

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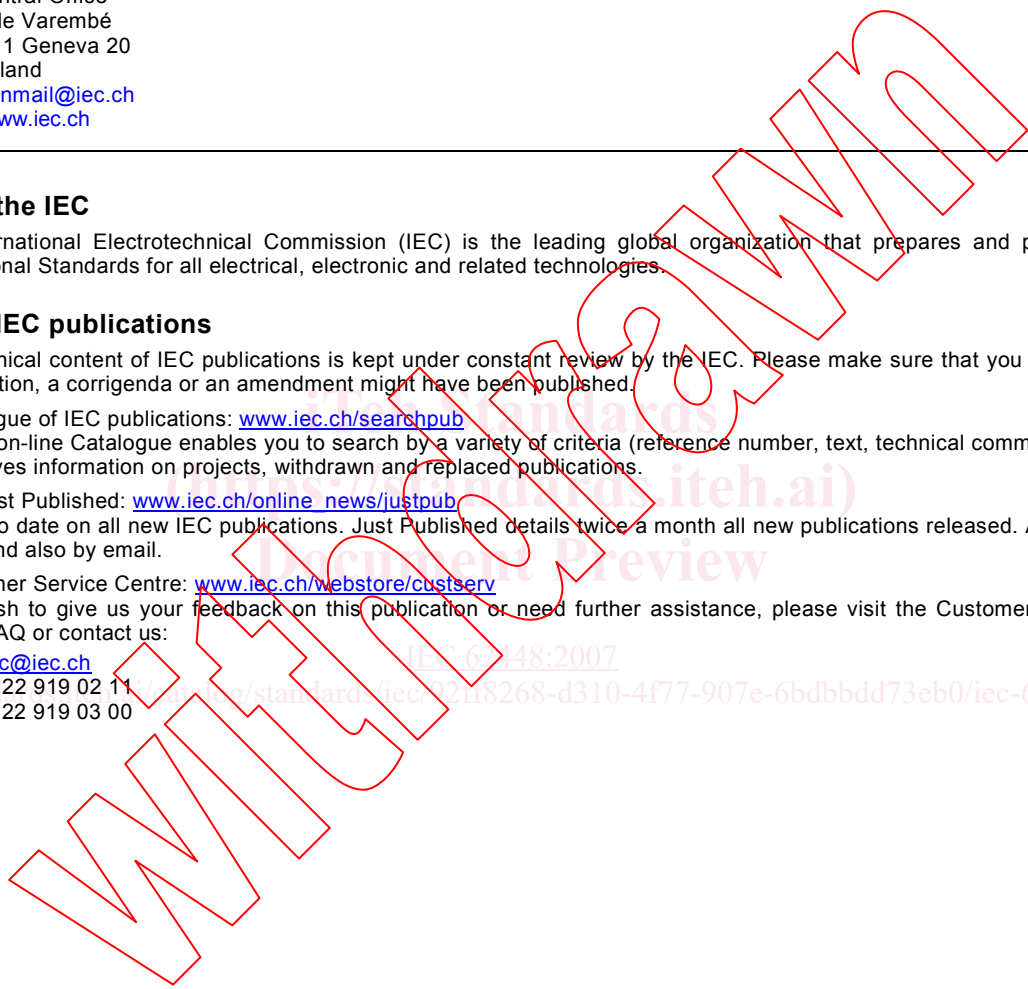
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

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International Standard IEC 62448 has been prepared by technical area 10: Multimedia e-publishing and e-books, of IEC technical committee 100: Audio, video and multimedia systems and equipment.

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

CDV	Report on voting
100/1090/CDV	100/1163/RVC

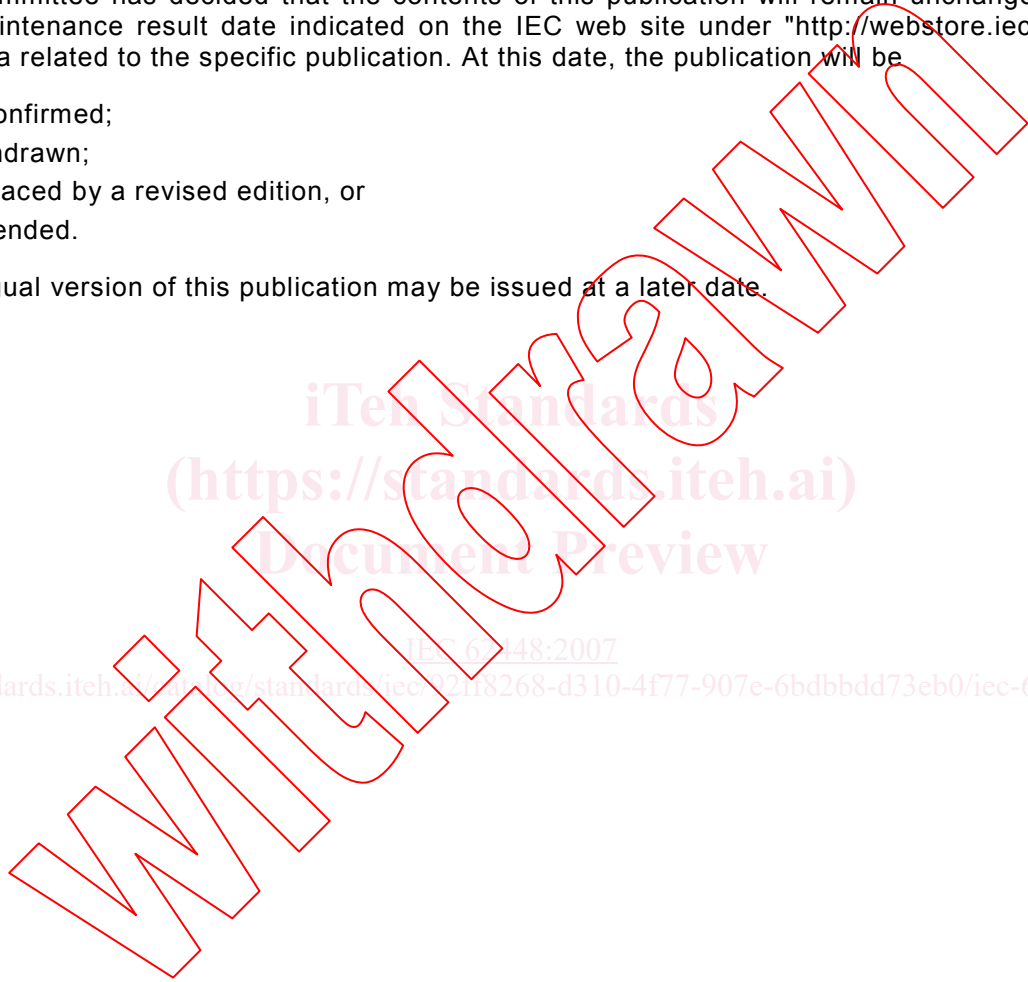
Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

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

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INTRODUCTION

Markets for multimedia e-book 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, generic format and reader's format. The submission format has to support an interaction between authors and data preparers. The reader's format depends on e-publishing equipment. The generic format has to provide an interchange format for data preparers and publishers and therefore should be e-publishing equipment independent.

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MULTIMEDIA SYSTEMS AND EQUIPMENT – MULTIMEDIA E-PUBLISHING AND E-BOOKS – GENERIC FORMAT FOR E-PUBLISHING

1 Scope

This International Standard specifies a generic format for multimedia e-publishing employed for e-book data interchange among data preparers and publishers, satisfying a number of publishers requirements: revisable, extensible and heterogeneous logical structure.

2 Normative references

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

IEC 62229:2005, *Multimedia systems and equipment – Multimedia e-publishing and e-books – Conceptual model for multimedia e-publishing*

ISO/IEC 19757-2:2003 *Information technology – Document Schema Definition Language (DSDL) – Part 2: Regular-grammar based validation – RELAX NG Amendment 1 (2003)*

ISO 639, *Codes for the representation of names of languages*

3 Terms and definitions

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

3.1

multimedia e-book

multimedia content consisting of texts, graphics, sounds and/or videos

3.2

data preparer

organization or person that prepares an e-book. An editor is an example of a preparer

3.3

publisher

organization or person that issues and distributes an e-book

3.4

generic format

format for multimedia e-book contents created and edited by a data preparer and modified by a publisher to a reader's format for e-book distribution

4 Position and requirements for generic format

4.1 Generic format in contents creation/distribution model

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

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

IEC 2379/06

Figure 1 – Contents creation/distribution model

Between the adjacent processing steps, data preparer and publisher, e-book contents data are interchanged using the generic format. Merging original texts, graphics, sounds and/or videos provided by authors, the data preparer creates and edits the e-book data in a generic format. The e-book data are stored and forwarded to the publishers.

Publishers modify the generic format into reader's formats appropriate for distribution schemes and devices. The generic format can be used for e-book distribution as well.

4.2 Requirements for generic format

The generic format can satisfy the following requirements of the data preparer and the publisher:

- a) logical structure:
the generic format has to have a logical structure that can easily be revised;
- b) style specification:
the logical elements in the generic format should be rendered in accordance with a style specification for creating an appropriate reader's format;
- c) heterogeneous structures:
multimedia e-books may include heterogeneous structures such as mathematics, chemistry and music notes according to the genre of contents. Those specific structures should be imported to the generic format;
- d) metadata:
the generic format should support some metadata to manage the e-book contents data.

5 Notation

The logical structure of generic format is described by using RELAX NG schema, ISO/IEC 19757-2 and its amendment 1.

6 Logical structure

The logical structure of generic format: ebook-g, provides a simple and extensible format ebook-g-core and an existing and actually employed format bbebylog. The structure of bbebylog is shown in Annex A.

```
default namespace="http://tc100.iec.ch/2005/ebook/generic"
```

```
start = ebook-g
```

```
ebook-g = ebook-g-core
```

```
    | external "bbebylog.rnc"
```

```
ebook-g-core = meta-g & body-g
```

```
meta-g = external "meta-g.rnc"
```

```
body-g = element body-g { body }
```

```
body =
```

```
    title*,
```

```
    foreword*,
```

introduction*,
titled-clause+,
annex*,
bibliography*
title = element title {
 element main { text },
 element sub { text }?
}

foreword = element foreword { text }

introduction = element introduction { block+ }

titled-clause = element clause { id, title, clause-content }

clause-content =
 (titled-clause, titled-clause+) | untitled-clause-content

untitled-clause-content = (untitled-clause, untitled-clause+) | block+

untitled-clause = element clause { id, untitled-clause-content }

referenced-document =
 element referenced-document {
 id,
 element abbrev { text },
 element title { text },
 element field { text }*,
 element url { xsd:anyURI }
 }

annex =
 element annex {
 id,
 title,
 clause-content
 }

bibliography = element bibliography { referenced-document+ }

block = p | ol | ul | example | note | pre | float

p = element p { inline }

float = table | figure

table = external "table.rnc"

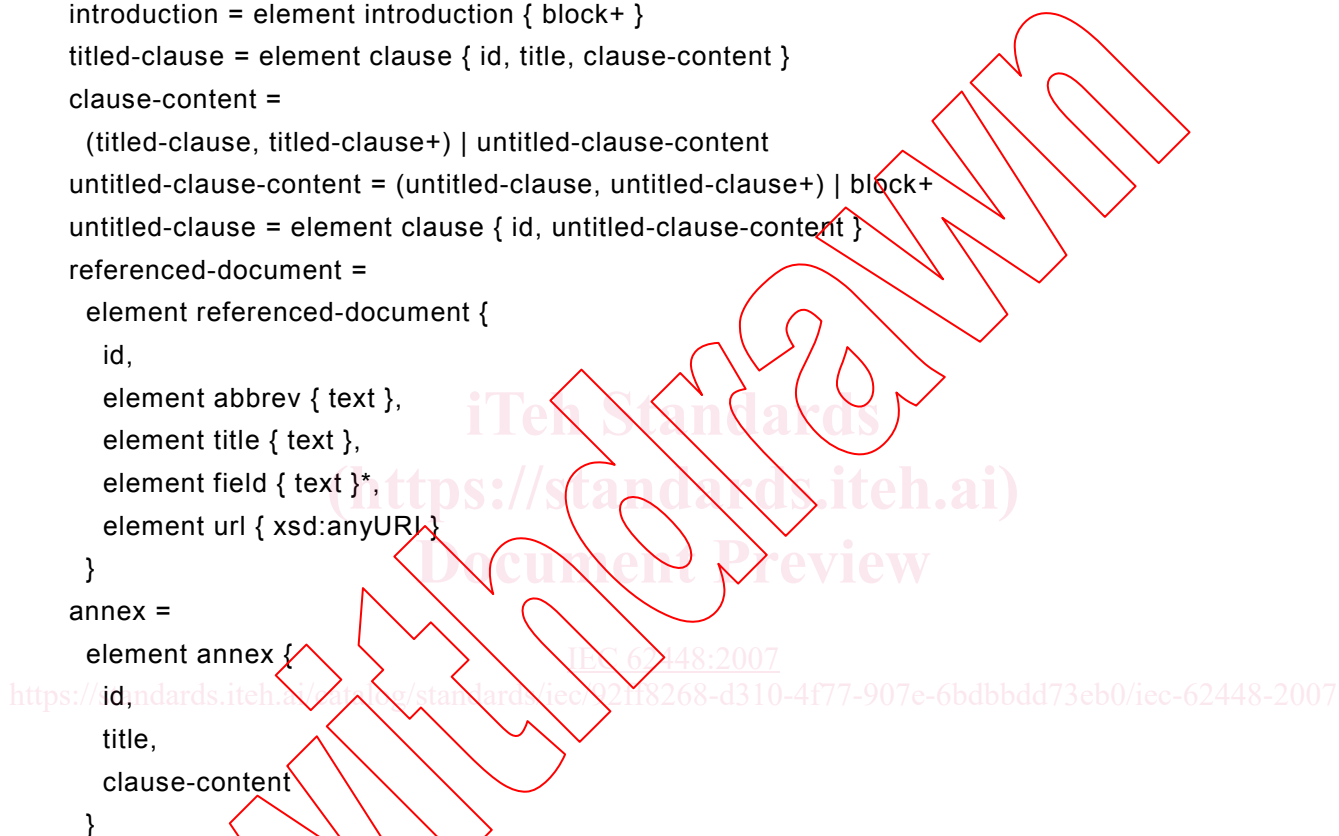
figure = external "figure.rnc"

ol =
 element ol {
 element li { id, block+ }+
 }

ul =
 element ul {
 element li { block+ }+
 }

example = element example { p+ }

note = element note { p+ }



pre = element pre { pre-content }

pre-content =

(text

| element var { pre-content })*

inline =

(text

| element code | b | i | var { inline }

| ref

| strong)*

ref =

element ref {

attribute to { xsd:IDREF }

}

id = attribute id { xsd:ID }?

strong = element strong { text }

7 Semantics

Elements of ebook-g-core should be rendered in accordance with appropriate style specifications. Actual style specifications by style languages, for example XSL or DSSSL, are outside the scope of this standard.

The contents of meta-g.rnc, table.rnc and figure.rnc are not specified within an architecture of the ebook-g-core.

Annex A (normative)

BBeB Xylog Format

A.1 General

This annex specifies the bbebxlog format mentioned in Clause 6.

This format is intended to be used for two kinds of users, that is, the e-Book contents producer and the related tool developer. Those who produce contents can use this specification as a generic contents data storage format based on the international standard specification. The related tool developer can use it as a reference to decide on the specification for the display equipment and to define the conversion rule between this specification and the other data forms such as any types of XML or HTML.

The feature of this specification specified in this annex includes the following:

- a) "expression of book on paper" concerning two screens layout and modified characters, etc.
- b) "expression of digital" such as sound, page jump and interactive action, etc.

The elements necessary for the above-mentioned expressions and their smooth operations are defined in this specification.

A.2 Structure description

namespace a = "http://relaxng.org/ns/compatibility/annotations/1.0"

namespace sch = "http://www.ascc.net/xml/schematron"

DrawChar =

- (element.Plot
- | element.CR
- | element.Fill
- | element.CharButton
- | element.Yoko
- | element.Tate
- | element.Nekase
- | element.NoBR
- | element.DrawChar
- | element.Italic
- | element.Bold
- | SimpleChar1)*

SimpleChar1 =

- (element.Rubi
- | element.Box
- | element.EmpDots
- | element.EmpLine
- | element.Sub
- | element.Sup

```

| element.Space
| SimpleChar0)*
SimpleChar0 = (text | element.Gaiji | element.AltString)*
SimpleChar2 = (element.Plot | SimpleChar0)*
# BBeB XML Xylog Basic
element.BBeBXylog =
  element BBeBXylog {
    attlist.version,
    element.BookInformation,
    element.Main,
    element.Style,
    element.Objects
  }
attlist.version &=
  attribute version { text }
  >> a:documentation [
    ' Constraint: Current "version" attribute value is "1.0" '
  ]
element.BookInformation =
  element BookInformation { element.Info, element.TOC }
element.Info =
  element Info {
    attlist.version, element.BookInfo, element.DocInfo, element.Keyword*
  }
element.BookInfo =
  element BookInfo {
    element.Title,
    element.Author,
    element.BookID,
    element.Publisher,
    element.Label,
    element.Category*,
    element.Classification,
    element.FreeText
  }
element.Title = element Title { attlist.reading, text }
attlist.reading &= attribute reading { text }
element.Author = element Author { attlist.reading, text }
element.BookID = element BookID { text }
element.Publisher = element Publisher { attlist.reading, text }
element.Label = element Label { attlist.reading, text }
element.Category = element Category { text }
element.Classification = element Classification { text }
element.FreeText = element FreeText { text }
element.DocInfo =

```

```

element DocInfo {
  element.CThumbnail,
  element.Language,
  element.Creator,
  element.SumPage
}
element.CThumbnail = element CThumbnail { attlist.CThumbnail }
attlist.CThumbnail &= attribute file { text }
element.Language =
  element Language {
    xsd:string { length = "2" }
    >> a:documentation [
      " Constraint: Set two-letter primary language code which is specified in ISO 639 "
    ]
  }
element.Creator = element Creator { text }
element.SumPage = element SumPage { text }
element.Keyword = element Keyword { text }
element.TOC = element TOC { element.TocLabel* }
element.TocLabel = element TocLabel { attlist.jump, text }
element.Main = element Main { element.Page+ }
element.Page =
  element Page {
    attlist.Page,
    element.Common.Page
  }
  >> sch:pattern [
    name = "Style Check"
    "\x{a}" ~
    " "
    sch:rule [
      context = "Page"
      "\x{a}" ~
      " "
      sch:assert [
        test = "@pagestyle = //Style/PageStyle/@stylelabel"
        "No PageStyle"
      ]
    ]
    "\x{a}" ~
    " "
  ]
  ]
}
element.Common.Page =

```

