

TECHNICAL SPECIFICATION

Multimedia systems and equipment – Multimedia e-publishing and e-book –
Conceptual model for multimedia e-publishing

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**MULTIMEDIA SYSTEMS AND EQUIPMENT –
MULTIMEDIA E-PUBLISHING AND E-BOOK –
CONCEPTUAL MODEL FOR MULTIMEDIA E-PUBLISHING**

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Technical specifications are subject to review within three years of publication to decide whether they can be transformed into International Standards.

IEC 62229, which is a technical specification, has been prepared by IEC technical committee 100: Audio, video and multimedia systems and equipment.

This second edition cancels and replaces the first edition published in 2006. This edition constitutes a technical revision.

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

- a) Annexes D and E have been added;
- b) Clause 5.6 has been added.

The text of this technical specification is based on the following documents:

Enquiry draft	Report on voting
100/2818/DTS	100/2870/RVDTS

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

This document 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

- transformed into an International standard,
- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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INTRODUCTION

Enlarging the size of the international and domestic markets for multimedia e-publishing and e-books requires standardization of their related technology. As a first step to the discussion and standardization of the technology, a conceptual model for the technology should be established and standardization issues should be clarified. The conceptual model includes all the e-publishing components and their functionality and clarifies the relationships between them. These clarifications are essential for the development of standards for e-publishing and e-book technology and are required by associated industries and users.

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MULTIMEDIA SYSTEMS AND EQUIPMENT – MULTIMEDIA E-PUBLISHING AND E-BOOK – CONCEPTUAL MODEL FOR MULTIMEDIA E-PUBLISHING

1 Scope

This document describes a conceptual model for multimedia e-publishing and e-book. The conceptual model is specified from the standardization point of view in order to clarify the functionality of e-publishing/e-book components and the relationships between them and to define e-publishing services.

The model provides the key technology to be standardized in the e-publishing environment. The modelling is not intended for actual implementation of a system or system components for e-publishing. The modelling is expected to be used as a reference for discussing and developing new standardization work on multimedia e-publishing and e-books and, therefore, to contribute to the expansion of the international and domestic markets for multimedia e-publishing and e-book.

The model is given as an example of the models for the multimedia data creation, data structure, equipment/system structure and user-system interface defined in IEC 61998.

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2 Normative references (standards.iteh.ai)

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 61998:2015, *Model and framework for standardization in multimedia equipment and systems*

ISO/IEC 19757-2:2008, *Information technology – Document Schema Definition Language (DSDL) – Part 2: Regular-grammar-based validation – RELAX NG*

Extensible Markup Language (XML) 1.0 (Third Edition), W3C Rec., 2004-02-04

NOTE Extensible Markup Language (XML) is a subset of ISO 8879:1986 (SGML) amended by its Technical Corrigendum 2.

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1

multimedia e-publishing

business model that produces, distributes and/or deals in multimedia e-books

3.2**multimedia e-book**

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

3.3**data preparer**

organization or person that prepares an e-book

Note 1 to entry An editor is an example of a preparer. See ISO 9660:1988.

3.4**publisher**

organization or person that issues and distributes an e-book

3.5**reading device**

equipment on which e-books are rendered and presented

4 Model for multimedia e-publishing**4.1 Contents creation/distribution model**

Contents for e-publishing are created and distributed according to the process shown in Figure 1.

Author $\xrightarrow{(1)}$ **Data preparer** $\xrightarrow{(2)}$ **Publisher** $\xrightarrow{(3)}$ **Reader**

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- IEC TS 62229:2017**
- (1) Content data in submission format
 - (2) Content data in generic format
 - (3) Content data in reader's format

Figure 1 – Contents creation/distribution process

Between the adjacent steps of the process, e-book content data are interchanged using the following formats.

a) Submission format

Submission formats depend on the functionality and capability of authors' equipment or data preparer. Standardization of the formats is required, in particular, by data preparers.

An important functionality of the submission format is a support for proofreading mark-up to be interchanged between the author and the data preparer.

b) Generic format

Standardization of generic formats is essential for interchanging e-book content data between the data preparer and the publisher. Some specifications for generic formats should be discussed and accepted as international standards.

A support for proofreading is (or may be) also required for the generic format.

c) Reader's format

Reader's formats depend on the functionality and capability of readers' equipment, such as PDA, PC, mobile phone or e-book specific equipment. Standardization for the formats will be required, in particular, for the readers' benefit.

4.2 Multimedia data structure model

Multimedia e-book content data in the formats given in 4.1 should have the following structures.

a) Content data in submission format

Content data in submission format should have logical structures, based on the authors' intention or the template of the data preparer, for flexible editing and revising. Multimedia content data include character strings, pictures, tables and other types of contents. Document style specifications or information are not always required.

b) Content data in generic format

Content data in generic format should have logical structures (the structures should be described by ISO/IEC 19757-2 and/or XML (W3C Rec.)) and document style specifications (for example, DSSSL (ISO/IEC 10179) or XSL specification) for human readable rendering. Publishers shall convert the generic format into a reader's format for e-book distribution. Style specifications for the content data may be separate standards from the standards for the logical structure of generic formats.

NOTE BBEB Book XML Xylog File Format and oebps1.2(OeBF) are examples of generic formats.

c) Content data in reader's format

Content data in reader's format should (or may) have the following features:

- preserving visible image;
- non-revisable (final form);
- lightweight.

A reader's format may have a specific data structure depending on the reading device. When rendering functionality is supported by reading devices, both logical structure and style specification are recommended for flexibility of presentation. When no rendering functionality is supported by reading devices, the reader's format should have a final form structure.

NOTE BBEB Book File Format and PDF are examples of readers' formats.

d) Proofreading format

Proofreading formats should have the following features:

- object location;
- operation (delete, add, etc.);
- new contents.

Proofreading formats are imported into a submission format or generic format. Proofreading formats in a generic format are requested to support style objects.

4.3 E-book distribution model

4.3.1 General

An e-publishing system consists of the components shown in Figure 2. These components deal with their corresponding information.

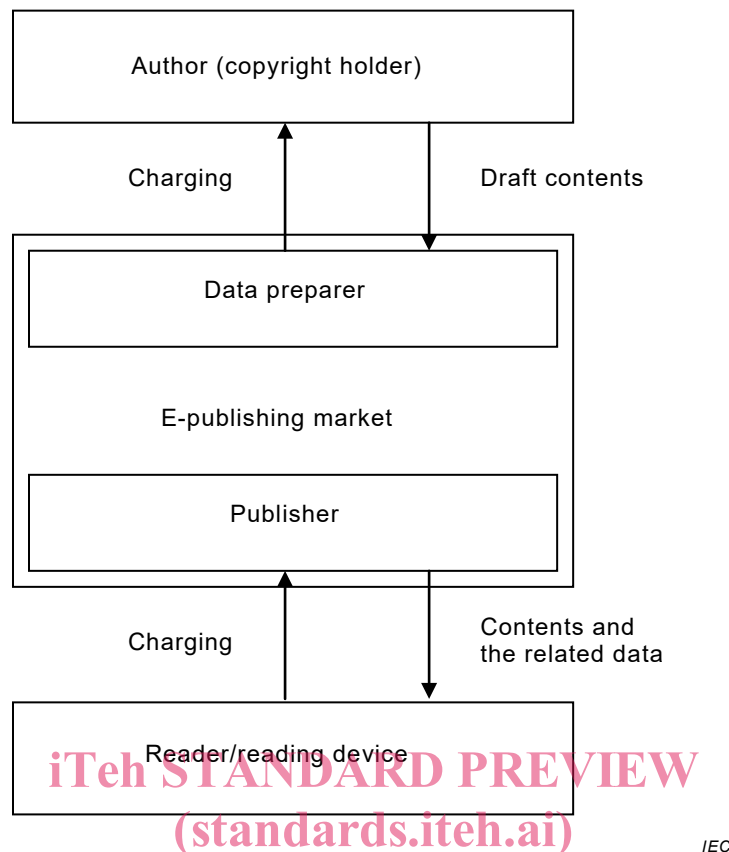


Figure 2 – E-book distribution model

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4.3.2 E-publishing market

The e-publishing market is an environment for the distribution of multimedia e-book contents and the related data among data preparers, publishers and readers. This data distribution can be supported by an appropriate charging mechanism in accordance with the related data.

E-publishing activities will increase PIM (personal information management) data storage within the market. The PIM data can encourage an appropriate e-book distribution.

4.3.3 Related data

Related data includes:

- meta data;
- copyright data;
- DRM (digital rights management) data;
- PIM (personal information management) data;
- etc.

4.4 Interfaces to e-book systems and equipment

4.4.1 General

E-book systems and equipment should have appropriate user-system interfaces and/or application program interfaces (APIs) providing their services to data preparers, publishers and e-book readers.