SLOVENSKI STANDARD
SIST EN 62524:2011

01-julij-2011

Večpredstavnostni sistemi in oprema - Večpredstavnostno e-založništvo in e-knjige - Bralni format za e-založništvo (IEC 62524:2009)

Multimedia systems and equipment - Multimedia e-publishing and e-books - Reader's format for e-publishing (IEC 62524:2009)

Multimediasysteme und -geräte – E-Publishing und E-Books für Multimedia-Anwendungen – Reader-Format für E-Publishing (IEC 62524:2009)

Systèmes et appareils multimedia – Edition électronique multimedia et livres électroniques – Format du lecteur pour édition électronique (CEI 62524:2009)

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Multimedia systems and equipment - Multimedia e-publishing and e-books - Reader's format for e-publishing

(IEC 62524:2009)

Systèmes et appareils multimedia – Edition électronique multimedia et livres électroniques – Format du lecteur pour édition électronique
(CEI 62524:2009)

Multimediasysteme und -geräte - E-Publishing und E-Books für Multimedia-Anwendungen - Reader-Format für E-Publishing
(IEC 62524:2009)

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CENELEC

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Foreword

The text of document 100/1376/CDV, future edition 1 of IEC 62524, prepared by technical area 10, Multimedia e-publishing and e-books, of IEC TC 100, Audio, video and multimedia systems and equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 62524 on 2011-01-02.

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The following dates were fixed:

– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2011-10-02
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2014-01-02

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 62524:2009 was approved by CENELEC as a European Standard without any modification.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC/TS 62229	2006	Multimedia systems and equipment - Multimedia e-publishing and e-book - Conceptual model for multimedia e-publishing	-	-

IEC 62524

Edition 1.0 2009-02

INTERNATIONAL STANDARD

Multimedia systems and equipment – Multimedia e-publishing and e-books – Reader's format for e-publishing

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ELECTROTECHNICAL
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

MULTIMEDIA SYSTEMS AND EQUIPMENT – MULTIMEDIA E-PUBLISHING AND E-BOOKS – READER'S FORMAT FOR E-PUBLISHING

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.
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International Standard IEC 62524 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
100/1376/CDV	100/1487/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 maintenance result date indicated on the IEC web site 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 edition of this document may be issued at a later date.

INTRODUCTION

Markets for multimedia e-book and e-publishing require standardization of formats for e-book data interchange among related parties; 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 generic format has to provide an interchange format for data preparers and publishers and therefore should be reading-device-independent. The reader's format depends on e-publishing equipment.

MULTIMEDIA SYSTEMS AND EQUIPMENT – MULTIMEDIA E-PUBLISHING AND E-BOOKS – READER'S FORMAT FOR E-PUBLISHING

1 Scope

This International Standard specifies a reader's format for multimedia e-publishing employed for e-book data interchange among publishers and readers, satisfying a number of readers' requirements such as being non-revisable, equipment-adaptive and application-adaptive.

NOTE This International Standard does not address the following issues:

- elements necessary for final print reproduction only;
- rendering issues related to physical devices;
- metadata issues for document management;
- security issues such as DRM for document.

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/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
data preparer
organization or person that prepares an e-book

NOTE An editor is an example of preparer.

3.2
multimedia e-book
multimedia content consisting of text, graphics, sound and/or video data

3.3
publisher
organization or person that issues and distributes an e-book

3.4
reader
the final user who reads the e-book

3.5
reader's format
format for multimedia e-book contents rendered and presented by reading device

3.6
reading device
equipment or program used to render and display e-books

4 Position and requirements for reader's format

4.1 Reader's 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 190/09

Figure 1 – Contents creation/distribution model

In the third step of the distribution chain, the publisher creates the final version of the document in the reader's format, based on data obtained from the generic format in the previous step, and finally distributes it to the reader. There can be several distinct reader's formats, adapted to the various reading devices and distribution schemes. Because of reading devices' potential limitations, some reader's format may lack support for certain features of the corresponding generic format. It is the publisher's role to determine how to convert an e-book to a less capable format.

4.2 Requirements for reader's format

The reader's format can satisfy the following requirements of readers:

a) non-revisable

As the reader's format is the final form of the document, which will be used only for viewing, there is little point in it being revisable. What matters most is that the file should be easy to process, even if this makes editing the data more difficult. Being revisable can even be considered a problem, since it makes the format needlessly complex.

b) equipment-adaptive, application-adaptive

The reader's format is directly processed while the reader browses the book. For that reason, to maximize the reader's comfort, the format should be specifically designed to match the capabilities of the device, in terms of CPU power, memory foot-print, display size, etc. For example, a format targeted at a device with weak processing abilities should, in order to keep the memory and CPU requirements low: (1) Use a light special purpose binary structure, rather than processing-intensive formats like XML, (2) store the pre-calculated position of the elements, rather than compute the layout on the fly... On the other hand, if the target reading device is a high end processing system like a PC, a format allowing for rich multimedia effects would be preferred, since it can easily be handled.

c) legibility

To achieve a sufficient level of reading comfort, it is important that the reader's format pays attention to legibility on the reading device. In that regard, the following implementation methods can be considered.

- Fixed page layout

  The format defines the document so that each page of the document may be rendered identically on any reading device. In this type of layout, it is common to record directly in the file the actual position of all displayable elements. Generally, as the publisher can specify precisely the final aspect, he will set the layout that is deemed to be the most comfortable for the reader. Consequently, complex designs can be achieved, as long as the display is as large as, or maybe larger, than the designer expected, making it possible to reach excellent levels of legibility. On the other hand, if the actual display is smaller than the one the document was designed for, it must be zoomed out,

possibly making some characters unreadable, or the reader has to scroll around the document, reducing the reading comfort.

- Flowing layout

  In this type of layout, the reading device dynamically determines, according to the screen size, where line breaks should be inserted, and compute the resulting position of the various elements. The final layout therefore depends on the screen size, font type, font size, etc. The reading device usually has a set of rules to handle word wrapping or hyphenation (ends of lines). Even though this layout model cannot achieve designs as sophisticated as fixed page layouts, it can guarantee that the text will remain clearly readable, whatever the screen size. It also usually gives more customization options to the reader, letting him set parameters as the font size or colour, making it more easily adaptable to individual readers' preferences. On the other hand, the publisher somewhat loses control over the final appearance of the document.

- Others

  Intermediate solutions also exist. For example, a format could specify what is essentially a fixed layout when the screen is large enough to display the defined layout at the current zoom level, but also allow, when zooming in, to change the layout (by collapsing the margins or changing the paragraphs size, for example), so that the characters can indeed be zoomed in, without making the page larger than the screen.

4.3 File format

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.

The format may also be adapted to the mode of distribution.

- Complete single download: A whole e-book is copied or downloaded at a time to the reading device. In that case, the e-book can usually be stored in a single file.
- Continuous download: Chunks are downloaded on demand, during the rendering. This is useful for device with readily available connectivity, but limited storage capacity. This may be achieved by splitting the document in several small files.

4.4 Features of the reader's Format

4.4.1 General

The features of the reader's format may vastly vary with the targeted reading devices, depending on their capabilities. For this reason, while creating contents for a particular reading device, the publisher may have to omit some features, or, on the contrary, add others to compensate.

4.4.2 Types of displayable elements

Actual rendering capacities of the rendering device may vary, but reader's formats should at least support text and static images. In addition, animations made of a sequence of static images, sound, movies and other multimedia data may be supported too.

4.4.3 Layout and styling

Reader's format, as the final document, shall contain all the styling information needed for proper screen rendering. As stated in 4.2 c), there are mainly two types of layout: the fixed page layout, and the flowing layout. In each case, the way to specify the style may be quite different. When opting for a fixed page layout, the most common solution is to store the final position and style of each displayable element. On the other hand, formats with a flowing