INTERNATIONAL STANDARD

ISO/IEC 23736-5

First edition
2020-02

Information technology — Digital publishing — EPUB 3.0.1 —

Part 5: Media overlays

Technologies de l'information — Publications numériques — EPUB 3.0.1 —

Partie 5: Superposition de médias

Reference number
ISO/IEC 23736-5:2020(E)

Documents
Document Sharing Hub
© ISO/IEC 2020

Full document details: ISO IEC 23736-5-2020

COPYRIGHT PROTECTED DOCUMENT

© ISO/IEC 2020

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

© ISO/IEC 2020 – All rights reserved

Documents
Document Sharing Hub

Full document details: ISO IEC 23736-5-2020

Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of document should be noted (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents) or the IEC list of patent declarations received (see http://patents.iec.ch).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by the World Wide Web Consortium (W3C) (as EPUB Media Overlays 3.0.1) and drafted in accordance with its editorial rules. It was adopted, under the JTC 1 PAS procedure, by Joint Technical Committee ISO/IEC JTC 1, *Information technology*.

A list of all parts in the ISO/IEC 23736 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

© ISO/IEC 2020 – All rights reserved

Documents
Document Sharing Hub
Full document details: ISO IEC 23736-5-2020

Documents
Document Sharing Hub

Full document details: ISO IEC 23736-5-2020

EPUB Media Overlays 3.0.1

Recommended Specification 26 June 2014

THIS VERSION

http://www.idpf.org/epub/301/spec/epub-mediaoverlays-20140626.html

LATEST VERSION

http://www.idpf.org/epub3/latest/mediaoverlays

PREVIOUS VERSION

http://www.idpf.org/epub/301/spec/epub-mediaoverlays-20140228.html

A diff of changes from the previous version is also available.

Please refer to the errata for this document, which may include some normative corrections.

Copyright © 2010-2013 International Digital Publishing Forum™

All rights reserved. This work is protected under Title 17 of the United States Code. Reproduction and dissemination of this work with changes is prohibited except with the written permission of the International Digital Publishing Forum (IDPF).

EPUB is a registered trademark of the International Digital Publishing Forum.

Editors

Marisa DeMeglio, DAISY Consortium

Daniel Weck, DAISY Consortium

TABLE OF CONTENTS

1. Overview
- 1.1. Purpose and Scope
- 1.2. Relationship to Other Specifications
- 1.3. Terminology
- 1.4. Typographic Conventions
- 1.5. Conformance Statements
- 1.6. Namespace prefix mappings

2. Media Overlay Document Definition
- 2.1. Introduction
- 2.2. Content Conformance
- 2.3. Reading System Conformance
- 2.4. Media Overlay Document Definition
  - 2.4.1. The `smil` Element
  - 2.4.2. The `head` Element
  - 2.4.3. The `metadata` Element
  - 2.4.4. The `body` Element
  - 2.4.5. The `seq` Element
  - 2.4.6. The `par` Element
  - 2.4.7. The `text` Element
  - 2.4.8. The `audio` Element

Documents
Document Sharing Hub

Full document details: ISO IEC 23736-5-2020

3. Creating Media Overlays
3.1. Overview
3.2. Relationship to the EPUB Content Document
3.2.1. Structure
3.2.2. Granularity
3.2.3. Embedded Audio and Video
3.2.4. Text-to-Speech
3.3. Semantic Inflection
3.4. Associating Style Information
3.5. Packaging
3.5.1. Including Media Overlays
3.5.2. Media Overlays Metadata Vocabulary
4. Playback Behaviors
4.1. Loading the Media Overlay
4.2. Basic Playback
4.2.1. Timing and Synchronization
4.2.2. Rendering Audio
4.2.3. Rendering EPUB Content Document Elements
4.3. Interacting with the EPUB Content Document
4.3.1. Navigation
4.3.2. Embedded Audio and Video
4.3.3. Text-to-Speech
4.4. Skippability and Escapability
4.4.1. Skippability
4.4.2. Escapability
A. Media Overlays Schema
B. Examples of Clock Values
C. Acknowledgements and Contributors
References

› 1 Overview

› 1.1 Purpose and Scope

This section is informative

This specification, EPUB Media Overlays 3.0.1, defines a usage of [SMIL] (Synchronized Multimedia Integration Language), the Package Document, the EPUB® Style Sheet, and the EPUB Content Document for representation of audio synchronized with the EPUB Content Document.

This specification is one of a family of related specifications that compose EPUB 3, the third major revision of an interchange and delivery format for digital publications based on XML and Web Standards. It is meant to be read and understood in concert with the other specifications that make up EPUB 3:

- The EPUB 3 Overview [EPUB3Overview], which provides an informative overview of EPUB and a roadmap to the rest of the EPUB 3 documents. The Overview should be read first.
- EPUB Publications 3.0.1 [Publications301], which defines the semantics and overarching conformance requirements for each Rendition of an EPUB Publication.
- EPUB Content Documents 3.0.1 [ContentDocs301], which defines profiles of XHTML, SVG and CSS for use in the context of EPUB Publications.

AVA Documents
Document Sharing Hub

© ISO/IEC 2020 – All rights reserved
Full document details: ISO IEC 23736-5-2020

- EPUB Open Container Format (OCF) 3.0.1 [OCF301], which defines a file format and processing model for encapsulating a set of related resources into a single-file (ZIP) EPUB Container.

› 1.2 Relationship to Other Specifications

This section is informative

This specification relies on a subset of [SMIL], from which the EPUB Media Overlays elements and attributes defined in Media Overlay Document Definition are derived.

› 1.3 Terminology

EPUB Publication

A collection of one or more Renditions conforming to this specification and its sibling specifications , packaged in an EPUB Container.

An EPUB Publication typically represents a single intellectual or artistic work, but this specification and its sibling specifications do not circumscribe the nature of the content.

Rendition

A logical document entity consisting of a set of interrelated resources representing one rendering of an EPUB Publication.

Publication Resource

A resource that contains content or instructions that contribute to the logic and rendering of at least one Rendition of an EPUB Publication. In the absence of this resource, the EPUB Publication might not render as intended by the Author. Examples of Publication Resources include a Rendition's Package Document, EPUB Content Document, EPUB Style Sheets, audio, video, images, embedded fonts and scripts.

With the exception of the Package Document itself, the Publication Resources required to render a Rendition are listed in that Rendition's manifest [Publications301] and bundled in the EPUB Container file (unless specified otherwise in Publication Resource Locations [Publications301]).

Examples of resources that are not Publication Resources include those identified by the Package Document link [Publications301] element and those identified in outbound hyperlinks that resolve outside the EPUB Container (e.g., referenced from an [HTML5] `a` element `href` attribute).

EPUB Content Document

A Publication Resource that conforms to one of the EPUB Content Document definitions (XHTML or SVG).

An EPUB Content Document is a Core Media Type, and may therefore be included in the EPUB Publication without the provision of fallbacks [Publications301] .

XHTML Content Document

Documents
Document Sharing Hub

© ISO/IEC 2020 – All rights reserved

Full document details: ISO IEC 23736-5-2020

An EPUB Content Document conforming to the profile of [HTML5] defined in XHTML Content Documents [ContentDocs301] .

XHTML Content Documents use the XHTML syntax of [HTML5].

SVG Content Document

An EPUB Content Document conforming to the constraints expressed in SVG Content Documents [ContentDocs301] .

EPUB Navigation Document

A specialization of the XHTML Content Document, containing human- and machine-readable global navigation information, conforming to the constraints expressed in EPUB Navigation Documents [ContentDocs301] .

Core Media Type

A set of Publication Resource types for which no fallback is required. Refer to Publication Resources [Publications301] for more information.

Package Document

A Publication Resource carrying bibliographical and structural metadata about a given Rendition of an EPUB Publication, as defined in Package Documents [Publications301] .

Manifest

A list of all Publication Resources that constitute the given Rendition of a EPUB Publication.

Refer to manifest [Publications301] for more information.

Spine

An ordered list of Publication Resources, typically EPUB Content Documents, representing the default reading order of the given Rendition of an EPUB Publication.

Refer to spine [Publications301] for more information.

Media Overlay Document

An XML document that associates the XHTML Content Document with pre-recorded audio narration in order to provide a synchronized playback experience, as defined in this specification.

Text-to-Speech (TTS)

The rendering of the textual content of an EPUB Publication as artificial human speech using a synthesized voice.

EPUB Style Sheet (or Style Sheet)

A CSS Style Sheet conforming to the CSS profile defined in EPUB Style Sheets [ContentDocs301] .

Viewport

The region of an EPUB Reading System in which the content of an EPUB Publication is rendered visually to a User.

CSS Viewport

AVA Documents
Document Sharing Hub

Full document details: ISO IEC 23736-5-2020
© ISO/IEC 2020 – All rights reserved

A Viewport capable of displaying CSS-styled content.

EPUB Container (or Container)

The ZIP-based packaging and distribution format for EPUB Publications defined in [OCF301].

Author

The person(s) or organization responsible for the creation of an EPUB Publication, which is not necessarily the creator of the content and resources it contains.

User

An individual that consumes an EPUB Publication using an EPUB Reading System.

EPUB Reading System (or Reading System)

A system that processes EPUB Publications for presentation to a User in a manner conformant with this specification and its sibling specifications .

› 1.4 Typographic Conventions

The following typographic conventions are used in this specification:

`markup`

All markup (elements, attributes, properties), code (JavaScript, pseudo-code), machine processable values (string, characters, media types) and file names are in red-orange monospace font.

`markup`

Links to markup and code definitions are underlined and in red-orange monospace font. Only the first instance in each section is linked.

`http://www.idpf.org/`

URIs are in navy blue monospace font.

hyperlink

Hyperlinks are underlined and in blue.

[reference]

Normative and informative references are enclosed in square brackets.

Term

Terms defined in the Terminology are in capital case.

Term

Links to term definitions have a dotted blue underline. Only the first instance in each section is linked.

Normative element, attribute and property definitions are in blue boxes.

Documents
Document Sharing Hub

© ISO/IEC 2020 – All rights reserved

Full document details: ISO IEC 23736-5-2020

```
Informative markup examples are in white boxes.
```

NOTE

Informative notes are in yellow boxes with a "Note" header.

CAUTION

Informative cautionary note are in red boxes with a "Caution" header.

› 1.5 Conformance Statements

The keywords MUST, MUST NOT, REQUIRED, SHALL, SHALL NOT, SHOULD, SHOULD NOT, RECOMMENDED, MAY, and OPTIONAL in this document are to be interpreted as described in [RFC2119].

All sections of this specification are normative except where identified by the informative status label "This section is informative". The application of informative status to sections and appendices applies to all child content and subsections they may contain.

All examples in this specification are informative.

› 1.6 Namespace prefix mappings

For convenience, the following namespace prefix mappings [XMLNS] are used throughout this specification:

prefix	namespace URI
epub	http://www.idpf.org/2007/ops

› 2 Media Overlay Document Definition

› 2.1 Introduction

This section is informative

Books featuring synchronized audio narration are found in mainstream e-books, educational tools and e-books formatted for persons with print disabilities. In EPUB 3, these types of books are created by using Media Overlay Documents to describe the timing for the pre-recorded audio narration and how

Documents Document Sharing Hub

© ISO/IEC 2020 – All rights reserved
Full document details: ISO IEC 23736-5-2020

it relates to the EPUB Content Document markup. The file format for Media Overlays is defined as a subset of SMIL, a W3C recommendation for representing synchronized multimedia information in XML.

The Media Overlays feature is designed to be transparent to EPUB Reading Systems that do not support the feature. The inclusion of Media Overlays in a Rendition of an EPUB Publication has no impact on the ability of Media Overlay-unaware Reading Systems to render that Rendition as though the Media Overlays are not present.

Although future versions of this specification may incorporate support for video media (e.g., synchronized text/sign-language books), this version supports only synchronizing audio media with the EPUB Content Document.

› 2.2 Content Conformance

A Media Overlay Document MUST meet all of the following criteria:

Document Properties

› It MUST meet the conformance constraints for XML documents defined in XML Conformance [Publications301] .

› It MUST be valid to the Media Overlays schema as defined in Appendix A, *Media Overlays Schema* and conform to all content conformance constraints expressed in Media Overlay Document Definition.

› It MUST be authored to reflect the structure of the EPUB Content Document with which it is associated, as stated in Structure .

› Authors SHOULD avoid using scripts to control audio and video embedded in the EPUB Content Document, as stated in Embedded Audio and Video.

› It SHOULD use semantic markup where appropriate, as described in Semantic Inflection.

› It MUST be packaged with the EPUB Publication as shown in Packaging.

File Properties

› The Media Overlay Document filename SHOULD use the file extension `.smil`.

› 2.3 Reading System Conformance

EPUB Reading System support for Media Overlays is OPTIONAL. A Reading System that supports Media Overlays MUST meet the following criteria:

› It MUST process the Media Overlay Document in conformance with all Reading System conformance constraints expressed in Media Overlay Document Definition.

› It MUST support XHTML Content Documents, and it MAY support SVG Content Documents.

› It MUST render Media Overlay elements as described in Basic Playback.

Documents
Document Sharing Hub

© ISO/IEC 2020 – All rights reserved

Full document details: ISO IEC 23736-5-2020

› It MUST allow User navigation while a Media Overlay is being played, as discussed in Navigation.

› It MUST adhere to rules regarding referenced audio and video embedded in the EPUB Content Document, as stated in Embedded Audio and Video.

› Text-to-Speech (TTS)-capable Reading Systems SHOULD conform to Reading System Text-to-Speech Conformance Requirements [Publications301] .

› It SHOULD offer the skippability and escapability features described in Skippability and Escapability.

A Reading System that does not support Media Overlays MUST meet the following criteria:

› It MUST ignore both the `media-overlay` attribute on manifest `item` elements and the manifest `item` elements where the `media-type` attribute value equals `application/smil+xml`.

› 2.4 Media Overlay Document Definition

All elements [XML] defined in this section are in the `http://www.w3.org/ns/SMIL` namespace [XMLNS] unless otherwise specified.

› 2.4.1 The `smil` Element

The `smil` element MUST be the root element of all Media Overlay Documents.

Element Name

`smil`

Usage

The `smil` element is the root element of the Media Overlay Document.

Attributes

`version` [required]

Specifies the version number of the [SMIL] specification to which the Media Overlay adheres.

This attribute MUST have the value "`3.0`" to indicate compliance with this version of the specification.

`id` [optional]

The ID [XML] of this element, which MUST be unique within the document scope.

`epub:prefix` [optional]

Declares additional metadata vocabulary prefixes.

Refer to Semantic Inflection for more information.

AVA Documents
Document Sharing Hub

© ISO/IEC 2020 – All rights reserved
Full document details: ISO IEC 23736-5-2020