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Foreword

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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 Publications 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.

EPUB Publications 3.0.1

Recommended Specification 26 June 2014

THIS VERSION

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

LATEST VERSION

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

PREVIOUS VERSION

http://www.idpf.org/epub/301/spec/epub-publications-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.

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1 Overview

1.1 Purpose and Scope

This section is informative

This specification, EPUB Publications 3.0.1, defines semantics and conformance requirements for EPUB® Publications, including the format of the Package Document that describes each Rendition of the content and rules for how this document and other Publication Resources are associated to create a conforming EPUB Publication.

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 Content Documents 3.0.1 [ContentDocs301], which defines profiles of XHTML, SVG and CSS for use in the context of EPUB Publications.
- 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.
- EPUB Media Overlays 3.0.1 [MediaOverlays301], which defines a format and a processing model for synchronization of text and audio.

This specification supersedes EPUB Publications 3.0 [Publications30]. Refer to [EPUB3Changes] for information on differences between this specification and its predecessor.

1.2 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.

Default Rendition

The Rendition listed in the first `rootfile` element in the Container – META-INF/container.xml [OCF301] file.

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 and bundled in the EPUB Container file (unless specified otherwise in Publication Resource Locations).

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

Foreign Resource

A Publication Resource that is not a Core Media Type. A Foreign Resource requires at least one fallback, as defined in Restrictions and Fallbacks.

Core Media Type Resource

A Publication Resource that is a Core Media Type and may therefore be included in the EPUB Publication without the provision of fallbacks.

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.

XHTML Content Document

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] .

Scripted Content Document

An EPUB Content Document that includes scripting or an XHTML Content Document that contains HTML5 forms elements.

Refer to Scripted Content Documents [ContentDocs301] for more information.

Top-level Content Document

An EPUB Content Document referenced from the spine, whether directly or via a fallback chain [Publications301] .

Fixed-Layout Document

An EPUB Content Document directly referenced from the spine that has been designated `pre-paginated` in the Package Document, as defined in The rendition:layout Property [Publications301] .

The dimensions to use for rendering Fixed-Layout Documents are defined in Fixed-Layout Documents [ContentDocs301] .

Synthetic Spread

The rendering of two adjacent pages simultaneously on a device screen.

Core Media Type

A set of Publication Resource types for which no fallback is required. Refer to *Publication Resources* 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* .

Unique Identifier

The Unique Identifier is the primary identifier for an EPUB Publication, as identified by the `unique-identifier` attribute. The Unique Identifier may be shared by one or many Renditions of the same EPUB Publication that conform to the EPUB standard and embody the same content.

The Unique Identifier is less granular than the ISBN. However, significant revision, abridgement, etc. of the content requires a new Unique Identifier.

Release Identifier

The Release Identifier allows any instance of an EPUB Publication to be compared against another to determine if they are identical, different versions, or unrelated.

Refer to Release Identifier for more information.

Manifest

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

Refer to manifest 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 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 [MediaOverlays301].

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

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 .

User Agent

A client or application that consumes generic HTML (e.g., Web browser, screen readers)

› 1.3 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.


```
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.

› 1.4 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.

2 EPUB Publications

This section defines conformance requirements for EPUB Publications and EPUB Reading Systems at the Rendition level. Conformance requirements particular to specific Publication Resources and processing contexts are located in the specifications referenced herein.

2.1 Content Conformance

Each Rendition of an EPUB Publication MUST meet all of the following criteria:

All Publication Resources

- All Publication Resources MUST be listed in the Package Document (as defined in manifest), adhere to the constraints for Core Media Types and Fallback and be located as per Publication Resource Locations.

The Package Document

- It MUST contain exactly one Package Document, which MUST conform to the content requirements defined in Package Document — Content Conformance.

Content Documents

- It MUST contain at least one EPUB Content Document conformant to the content requirements defined in EPUB Content Documents [ContentDocs301] .

The EPUB Navigation Document

- It MUST contain exactly one EPUB Navigation Document conformant to the content requirements defined in EPUB Navigation Documents — Content Conformance [ContentDocs301] .

EPUB Style Sheets

- It MAY contain zero or more EPUB Style Sheets conformant to the content requirements defined in EPUB Style Sheets — Content Conformance [ContentDocs301] .

EPUB Pronunciation Lexicons

- It MAY contain zero or more PLS Documents conformant to the content requirements defined in PLS Documents — Content Conformance [ContentDocs301] .

Media Overlay Documents

- It MAY contain zero or more Media Overlay Documents conformant to the content requirements defined in [MediaOverlays301].

Additional Publication Resources

- It MAY contain zero or more Publication Resources in addition to those listed above, each of which MUST adhere to the requirements in All Publication Resources.

Container

› It MUST be packaged in a EPUB Container as defined in [OCF301].

› 2.2 Reading System Conformance

An EPUB Reading System MUST meet all of the following criteria:

EPUB 3 Processing

› It MUST process the EPUB Container as defined in [OCF301].

› It MUST process the Package Document as defined in Package Document — Reading System Conformance, and honor all presentation logic expressed through the Package Document (e.g., the reading order, fallback chains, bindings, page progression direction and fixed layouts).

› It MUST NOT fail catastrophically if it encounters two distinct EPUB Publications with the same Unique Identifier.

› Unless specified as conditional behavior in this section, it MUST support all Core Media Type Resources.

› It MAY support an arbitrary set of Foreign Resource types, and MUST process fallbacks for unsupported Foreign Resources as defined in Restrictions and Fallbacks if not.

› It MUST process XHTML Content Documents as defined in XHTML Content Documents — Reading System Conformance [ContentDocs301] .

› It MUST process SVG Content Documents as defined in SVG Content Documents — Reading System Conformance [ContentDocs301] .

› If it has a CSS Viewport , it MUST support visual rendering of XHTML Content Documents as defined in EPUB Style Sheets — Reading System Conformance [ContentDocs301] .

› If it has the capability to render raster images, it MUST support the raster image Core Media Types.

› If it has the capability to render vector images, it MUST support the vector image Core Media Types.

› If it has the capability to render pre-recorded audio, it MUST support the MP3 audio Core Media Type, SHOULD support the MP4 audio Core Media Type and SHOULD support Media Overlays [MediaOverlays301].

› If it supports Text-to-Speech (TTS) rendering, it SHOULD support PLS Documents [ContentDocs301] , the CSS3 Speech features of the EPUB CSS Profile [ContentDocs301] and SSML attributes [ContentDocs301] in XHTML Content Documents.

› It MUST support the EPUB Canonical Fragment Identifiers scheme [EPUBCFI] for linking, and MAY support additional linking schemes as defined in the EPUB Linking Scheme Registry.

NOTE

It is recommended that Reading Systems support at least one of the [H.264] and [VP8] video codecs, but this is not a conformance requirement; a Reading System may support no video codecs at all. Content creators and Reading System developers should take

into consideration factors such as breadth of adoption, video playback quality, and technology usage royalty requirements when making a choice to include or implement video in either (or potentially, both) formats.

Backward Compatibility

› It SHOULD process EPUB version 2 Publications as defined in [OPF2], [OPS2] and [OCF2].

› It MUST attempt to process any given Rendition of an EPUB Publication whose Package Document `version` attribute designates a version lower than "`3.0`" or which omits the `version` attribute.

Forward Compatibility

› It SHOULD attempt to process any given Rendition of an EPUB Publication whose Package Document `version` attribute designates a version higher than "`3.0`".

XML Processing

› It MUST be a conformant non-validating processor [XML].

› It MUST be a conformant processor as defined in [XMLNS].

› It MUST support `xml-stylesheet` processing instructions [ASSOCSS], and MAY support additional processing instructions.

› It MUST be a conformant application as defined by [XML Base].

NOTE

A conforming Reading System is not necessarily a single dedicated program or device, but may exist as a distributed system.

› 3 Package Documents

› 3.1 Introduction

This section is informative

The Package Document carries bibliographic and structural metadata about a Rendition of an EPUB Publication, and is thus the primary source of information about how to process and display that Rendition.

The Package Document is an XML document consisting of a set of container elements, each dedicated to housing information about a particular aspect of the Rendition. These containers effectively centralize metadata, detail the individual resources that compose the Rendition and

provide reading order and other information for rendering the EPUB Publication is represents to a User.

The following list summarizes the information a Package Document contains:

- Rendition metadata — mechanisms for including and/or referencing metadata applicable to the EPUB Publication and/or the specific Rendition of it, including for particular resources within the Rendition.
- A manifest — identifies (via IRI) and describes (via MIME media type) the set of resources that collectively compose the given Rendition of the EPUB Publication.
- A spine — an ordered sequence of ID references to top-level resources in the manifest from which all other resources in the set can be reached or utilized. The spine defines the default reading order of the given Rendition.
- Fallback chains — an optional means for defining an ordered list of top-level resources that can be considered content equivalents that a Reading System can choose between for rendering.
- Bindings — an optional means of associating script-based implementations with custom media types.

› 3.2 Content Conformance

A Package Document MUST meet all of the following criteria:

Document Properties

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

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

File Properties

› The Package Document filename SHOULD use the file extension `.opf`.

Package Documents have the MIME media type `application/oebps-package+xml` [RFC4839].

› 3.3 Reading System Conformance

An EPUB Reading System MUST meet all of the following criteria:

Processing

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

› It SHOULD process presentational metadata, as expressed in General Properties

› It MUST process fixed layout metadata, as expressed in Fixed-Layout Properties