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Partie 7: Documents à mise en page fixe EPUB3

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ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

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ISO/IEC TS 30135 series were prepared by Korean Agency for Technology and Standards (as KS X 6070 series) with International Digital Publishing Forum and were adopted, under a special “fast-track procedure”, by Joint Technical Committee ISO/IEC JTC 1, Information technology, in parallel with its approval by the national bodies of ISO and IEC.

ISO/IEC TS 30135 consists of the following parts, under the general title *Information technology — Document description and processing languages — EPUB 3:*

- *Part 1: Overview*
- *Part 2: Publications*
- *Part 3: Content Documents*
- *Part 4: Open Container Format*
- *Part 5: Media Overlay*
- *Part 6: Canonical Fragment Identifier*
- *Part 7: Fixed-Layout Documents*

EPUB 3 Fixed-Layout Documents

INFORMATIONAL DOCUMENT

NOTE: It is anticipated that this document will be superseded by forthcoming updates to Publications 3.0 [Publications30] and Content Documents 3.0 [ContentDocs30] that will incorporate the metadata properties and mechanisms separately defined herein.

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Editors

Markus Gylling (IDPF), Dave Cramer (Hachette)

Authors

Takeshi Kanai (Sony), Peter Sorotokin (Adobe), Roger Webster (Barnes & Noble), James Lester (Barnes & Noble), Brady Kroupa (Barnes & Noble), Garth Conboy (Google), Brady Duga (Google), MURATA Makoto (JEPA), Edward O'Connor (Apple), Luc Audrain (Hachette Livre), Hadrien Gardeur (Feedbooks)

Status of this Document

This is an IDPF Informational Document, produced by the IDPF EPUB working group and approved by the IDPF board of directors as of March 13, 2012. It may be updated, replaced, or rendered obsolete by other documents at any time.

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›Purpose and Scope

EPUB® documents, unlike print books or PDF files, are designed to change. The content flows, or reflows, to fit the screen and to fit the needs of the reader. The EPUB 3.0 Specification says that “content presentation should adapt to the user rather than the user having to adapt to a particular representation of content.”

But this principle doesn’t work for all types of documents. Sometimes content and design are so intertwined they cannot be separated. Any change in appearance risks changing the meaning, or losing all meaning. *Fixed-layout documents* give content creators greater control over presentation, when a reflowable EPUB is not suitable for the content.

This document, EPUB 3 Fixed-Layout Documents, defines a set of metadata properties to allow declarative expression of intended rendering behaviors of fixed-layout documents in the context of EPUB 3. It also defines mechanisms to express the intended rendering dimensions of fixed-layout XHTML and SVG [ContentDocs30] content, as well as bitmap images.

NOTE

EPUB 3 affords multiple mechanisms for representing fixed-layout content in EPUB 3 documents. When fixed-layout content is necessary, the author's choice of mechanism will depend on many factors including desired degree of precision, file size, accessibility, etc. This document does not attempt to dictate the author's choice of mechanism.

› Property Definitions

›The rendition:layout property

Name	`rendition:layout`
Description	Specifies whether the given Publication or spine item is reflowable or pre-paginated.
Value	`reflowable` | `pre-paginated`
Usage	Package Document `meta` element Package Document `itemref` element
Initial	In `meta`: reflowable In `itemref`: inherited from `meta`
Cardinality	In `metadata`: zero or one In `itemref`: zero or one

›Usage

When the `rendition:layout` property is specified on the Package Document `meta` element, it indicates that the paginated or reflowable layout style (refer to Allowed values below) applies globally for the given Publication (i.e. for all spine items).

As 'reflowable' is the initial value of this property in the `meta` usage context, this value must be assumed by Reading Systems as the global value if no `meta` element carrying this property occurs in the Package Document instance.

The `rendition:layout` property may also be specified locally on the Package Document spine `itemref` element, and will, in this case, override the global value for the given spine item. (Refer to Specifying name-value pairs on the spine itemref element for syntactical rules specific to local specification.)

›Allowed values

The following values are defined for use with the `rendition:layout` property:

reflowable
: The given spine item is not pre-paginated. Reading Systems may apply dynamic pagination when rendering this spine item.

pre-paginated
: The given spine item is pre-paginated. Reading Systems must produce exactly one page when rendering this spine item. (Refer to Content dimensions for rules regarding dimensional declarations.)

> NOTE
>
> Reading Systems typically restrict or deny the application of User or User Agent stylesheets to pre-paginated documents, since as a result of intrinsic properties of such documents, dynamic style changes are highly likely to have unintended consequences. Authors should take into account the negative impact on usability and accessibility that these restrictions have when choosing to use pre-paginated instead of reflowable content. Refer to Guideline 1.4 - Provide text configuration of the W3C User Agent Accessibility Guidelines for related information.

›The rendition:orientation property

Name	`rendition:orientation`
Description	Specifies which orientation(s) the Author intends for the given Publication or spine item to be rendered in.
Value	`landscape` | `portrait` | `auto`
Usage	Package Document `meta` element Package Document `itemref` element
Initial	In `meta`: auto In `itemref`: inherited from `meta`

Cardinality	In `metadata`: zero or one In `itemref`: zero or one

›Usage

When the `rendition:orientation` property is specified on the Package Document `meta` element, it indicates that the intended orientation applies globally for the given Publication (i.e. for all spine items).

As ‘auto’ is the initial value of this property in the `meta` usage context, this value must be assumed by Reading Systems as the global value if no `meta` element carrying this property occurs in the Package Document instance.

The `rendition:orientation` property may also be specified locally on the Package Document spine `itemref` element, and will, in this case, override the global value for the given spine item. (Refer to Specifying name-value pairs on the spine itemref element for syntactical rules specific to local specification.)

›Allowed values

The following values are defined for use with the `rendition:orientation` property:

landscape
: The given spine item is intended for landscape rendering.

portrait
: The given spine item is intended for portrait rendering.

auto
: The given spine item is not orientation constrained.

Reading Systems that support multiple orientations should, unless the given value is 'auto', convey the intended orientation to the user. The means by which the intent is conveyed is implementation-specific.

›The rendition:spread property

Name	`rendition:spread`
Description	Specifies the intended Reading System synthetic spread behavior for this Publication or spine item.
Value	`none` | `landscape` | `portrait` | `both` | `auto`
Usage	Package Document `meta` element Package Document `itemref` element
Initial	In `meta`: auto In `itemref`: inherited from `meta`
Cardinality	In `metadata`: zero or one In `itemref`: zero or one

›Usage

When the `rendition:spread` property is specified on the Package Document `meta` element, it indicates that the intended synthetic spread behavior applies globally for the given Publication (i.e. for all spine items).

As 'auto' is the initial value of this property in the `meta` usage context, this value must be assumed by Reading Systems as the global value if no `meta` element carrying this property occurs in the Package Document instance.

The `rendition:spread` property may also be specified locally on the Package Document spine `itemref` element, and will, in this case, override the global value for the given spine item. (Refer to Specifying name-value pairs on the spine itemref element for syntactical rules.)

›Allowed values

The following values are defined for use with the `rendition:spread` property, where *synthetic spread* is defined as *the rendering of two adjacent pages simultaneously on the device screen*:

none
: Reading Systems must not incorporate this spine item in a synthetic spread.

landscape
: Reading Systems should incorporate this spine item in a synthetic spread only when the device is in landscape orientation.

portrait
: Reading Systems should incorporate this spine item in a synthetic spread only when the device is in portrait orientation.

both
: Reading Systems should incorporate this spine item in a synthetic spread regardless of device orientation.

auto
: No explicit synthetic spread behavior is defined. Reading Systems may use synthetic spreads in specific or all device orientations as part of a display area utilization optimization process.

When synthetic spreads are used in the context of XHTML and SVG Content Documents, the dimensions given via viewport/viewBox metadata represents the size of one page in the spread.

> NOTE
>
> Refer to 3.4.12 The spine Element for information about declaration of global flow directionality using the `page-progression-direction` attribute and that of local page-progression-direction within content documents.
>
> Refer also to Issue 205 for discussions on forthcoming specifications of precedence rules for the `page-progression-direction` attribute and the `writing-mode` and `direction` properties within XHTML Content Documents.

›The page-spread-* properties

Names	`rendition:page-spread-center` *and, as defined in [Publications30]* `page-spread-left` *and* `page-spread-right`
Description	Specifies the forced placement of a Content Document in a synthetic spread

Usage	Package Document spine `itemref` element
Cardinality	Zero or one

When a Reading System is rendering synthetic spreads, the default behavior is to populate the spread, which conceptually consists of two adjacent viewports, by rendering the next Content Document in the next available unpopulated viewport, where the location of "next" is determined by the given page progression direction, or by local declarations within content documents. By providing one of the page-spread-* properties on the spine itemref element, the author can override this automatic population behavior by forcing the given Content Document to be placed in a particular viewport.

The `page-spread-left` and `page-spread-right` properties are defined in [Publications30]. This document defines one additional property, `rendition:page-spread-center`, which indicates that the synthetic spread mode should be overridden such that instead of two adjacent viewports, a single viewport must be used, and positioned at the center of the screen.

Note that the presence of `rendition:page-spread-center` does not change the viewport dimensions; in particular it does not indicate that a viewport with the size of the whole spread should be created. This is important so that the scale factor stays consistent between regular and center-spread pages.

The `page-spread-left`, `page-spread-right` and `rendition:page-spread-center` properties apply to both pre-paginated and reflowable content, and they only apply when the Reading System is creating synthetic spreads.

›Usage of rendition properties in the EPUB 3 Package Document

›Prefix Mapping

When the metadata properties defined in this document are included in an EPUB 3 Package Document, they must be mapped to the URI `http://www.idpf.org/vocab/rendition/#` using the `prefix` attribute, as defined in EPUB Publications 3.0 vocabulary association.

```
<package …  prefix="rendition: http://www.idpf.org/vocab/rendition/#">
    …
</package>
```

Implementors should note that future revisions of [Publications30] may establish the vocabulary represented by the URI `http://www.idpf.org/vocab/rendition/#` as a reserved vocabulary. In this case, the result will be that a) explicit mapping declaration using the `prefix` attribute will no longer be applicable, and b) the prefix 'rendition' will be reserved for this vocabulary. Future revisions of [Publications30] may also integrate the properties defined here into the Package Document default vocabulary. In this case the properties defined herein will be allowed to occur in Package Documents without a prefix.

Note that Package Documents may include additional proprietary metadata properties that pertain to layout expressions (refer to Vocabulary Association Mechanisms for further information on extensibility). Reading Systems must ignore such expressions if they conflict behaviorally with the property semantics defined in this document.

›Specifying name-value pairs on the spine itemref element

In the context of the properties defined in this document, and when specifying property name-value pairs in the `properties` attribute on the Package Document spine `itemref` element, the following syntax must be used.

The property name and value is concatenated into a single string using a *hyphen-minus* character (`U+002D`) as

separator. Note that leading and trailing whitespace around the separator character is not allowed.

For example, to express that the `rendition:layout` property has the value 'reflowable' for the given spine item, the string 'rendition:layout-reflowable' is used:

```
<itemref … properties="rendition:layout-reflowable"/>
```

Content dimensions

This section defines rules for the expression and interpretation of dimensional properties of XHTML and SVG Content Documents [ContentDocs30] and bitmap images.

This document does not define how the content (and, specifically in the case of XHTML and SVG, the initial containing block) will be placed within the Reading System content display area.

Content dimensions for XHTML and SVG

Each XHTML and SVG spine item which has the 'pre-paginated' value set for its `rendition:layout` property must contain the viewport (for XHTML) or viewBox (for SVG) dimension expressions as defined below.

For both XHTML and SVG Content Documents, the dimension (viewport/viewbox) expressions define the CSS initial containing block (ICB) expressed in CSS Pixels [CSS].

Expressing ICB dimensions in XHTML

In XHTML, the ICB dimensions are expressed using the `viewport` meta tag using syntax as per [MetaTags]. In this version of this document, only the width and height expressions are required to be recognized by Reading Systems.

Example:

```
<head>
    …
    <meta name="viewport" content="width=1200, height=600"/>
    …
</head>
```

Reading Systems must clip XHTML content to the ICB dimensions declared in the viewport meta tag, and therefore content positioned outside of the initial containing block is not going to be visible. When the ICB aspect ratio does not match the aspect ratio of the Reading System content display area, Reading Systems may position the ICB inside the area to accommodate the user interface; in other words, added letter-boxing space may appear on either side (or both) of the content.

Expressing ICB dimensions in SVG

In SVG, the ICB dimensions are expressed using the viewBox attribute [SVG11].

Example:

```
<svg xmlns="http://www.w3.org/2000/svg"
    version="1.1" width="100%" height="100%"
    viewBox="0 0 844 1200">
    …
</svg>
```

›Content dimensions for bitmap images

Bitmap image dimensions are expressed through the intrinsic physical dimensions (i.e the actual physical pixel counts for width and height) of the given bitmap, not considering “resolution tags” or any form of transformation.

Note that this method of retrieving content dimensions only applies when bitmap images are referenced directly from the spine (i.e. not embedded in XHTML or SVG Content Documents).

›Appendix A. Examples

›Example 1

Fully fixed-layout content, intended to be rendered using synthetic spreads in landscape orientation, and no spreads in portrait orientation.

Package Document

```
<meta property="rendition:layout">pre-paginated</meta>
<meta property="rendition:spread">landscape</meta>
```

XHTML

All content documents contain:

```
<meta name="viewport" content="width=512, height=600"/>
```

Note: to leave the spread behavior up to the Reading System, the `rendition:spread` element is either omitted or set to ‘auto’.

›Example 2

Fully fixed-layout content, intended to be rendered without synthetic spreads, and locked to landscape orientation.

Package Document

```
<meta property="rendition:layout">pre-paginated</meta>
<meta property="rendition:spread">none</meta>

<meta property="rendition:orientation">landscape</meta>
```

XHTML

All content documents contain:

```
<meta name="viewport" content="width=1024, height=600"/>
```

›Example 3

Reflowable content with a single fixed-layout page (title page), where the fixed-layout page is intended for right-

hand spread slot if the device renders synthetic spreads.

Package Document

```
<meta property="rendition:layout">reflowable</meta>
<meta property="rendition:spread">auto</meta>
…

<itemref id="titlepage" properties="page-spread-right rendition:layout-pre-
paginated"/>
```

XHTML

The content document representing the title page contains:

```
<meta name="viewport" content="width=684, height=1024"/>
```

Note that in this example, both the `rendition:layout` and `rendition:spread` properties are set to their initial values, which means that these two meta elements can be omitted without any impact on the resulting expression.

›Example 4

Fully fixed-layout content where synthetic spreads — if used — must be disabled for a center plate.

Package Document

```
<meta property="rendition:layout">pre-paginated</meta>

<meta property="rendition:spread">auto</meta>
…
<itemref id="center-plate" properties="rendition:page-spread-center"/>
```

XHTML

The content document representing the center plate contains:

```
<meta name="viewport" content="width=512, height=600"/>
```

Note that the `rendition:spread=none` expression is not needed on the center plate item, as the `rendition:page-spread-center` property already specifies semantics that dictates that synthetic spreads be disabled.

Note also that in this example, the `rendition:spread` property is set to its initial value, and so it can be omitted without any impact on the resulting expression.

›Example 5

Reflowable content with a fixed-layout two-page center plate that is intended to be rendered using synthetic spreads in any device orientation. The author has left spread behavior for the other (reflowable) parts of the publication undefined, since the global value of `rendition:spread` is initialized to ‘auto’.

Package Document

```
<spine page-progression-direction="ltr">
```

```
    …
    <itemref id="center-plate-left" properties="rendition:spread-both page-spread-
left"/>
    <itemref id="center-plate-right" properties="rendition:spread-both page-spread-
right"/>
    …
</spine>
```

XHTML

The two content documents representing the center plate contains:

```
<meta name="viewport" content="width=512, height=600"/>
```

›Example 6

Fully fixed-layout content which includes three separate stylesheets used for three different device categories, using [MediaQueries].

Package Document

```
<meta property="rendition:layout">pre-paginated</meta>
```

XHTML

```
<link rel="stylesheet" href="eink-style.css" media="(max-monochrome: 3)"/>
<link rel="stylesheet" href="skinnytablet-style.css" media="((color) and
    (max-height:600px) and (orientation:landscape), (color) and (max-width:600px)
    and (orientation:portrait))" />
<link rel="stylesheet" href="fattablet-style.css" media="((color) and
    (min-height:601px) and (orientation:landscape), (color) and (min-width:601px)
    and (orientation:portrait)" />
```

›Example 7

Japanese manga in the right-to-left page progression direction. Each content document is a very simple HTML containing a bitmap and nothing else, and does not have associated CSS stylesheets.

Package Document

```
<meta property="rendition:layout">pre-paginated</meta>
<meta property="rendition:spread">landscape</meta>
…
<spine page-progression-direction="rtl">
    …
</spine>
```

Note that the page progression direction for the HTML content documents is 'ltr' rather than 'rtl'. This is because the reading system typically uses the default CSS stylesheet and the page progression direction implied by it is 'rtl'. Each spread is created by first using the right page and then the left page.

XHTML

All XHTML content documents contain:

```
<meta name="viewport" content="width=512, height=600"/>
```

›Example 8

A fully fixed-layout publication with bitmap images as the top-level content representation, using XHTML fallback.

Package Document

```
<meta property="rendition:layout">pre-paginated</meta>
…
<manifest>
    <item id="ch1" href="ch1.png" fallback="ch1x" … />
    <item id="ch2" href="ch2.png" fallback="ch2x" … />
    <item id="ch1x" href="ch1.xhtml" … />
    <item id="ch2x" href="ch2.xhtml" … />
</manifest>
<spine>
    <itemref idref="ch1" />
    <itemref idref="ch2" />
</spine>
```

XHTML

All fallback XHTML content documents contain:

```
<meta name="viewport" content="width=1024, height=600"/>
```


›Appendix B. Mapping Tables

The tables below describe how the vocabulary defined in this document maps to some of the pre-existing proprietary metadata vocabularies for fixed-layout expressions.

Amazon KF8 Children's Format

Amazon Property	IDPF Equivalent (prefixes omitted for clarity)
fixed-layout (true | false)	layout (reflowable | pre-paginated)
original-resolution (width, 'x', height)	viewport (XHTML meta)
orientation (portrait | landscape)	orientation (portrait | landscape | auto)
book-type (children | comic)	not applicable
RegionMagnification (true | false)	not applicable, proprietary