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BSI Standards Publication

Information technology — Digital publishing — EPUB 3.0.1

Part 2: Publications

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National foreword

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Foreword

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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*.

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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

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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

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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.

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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.

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`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.

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› 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

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› 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

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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

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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

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› For fixed layouts expressed using the `rendition:layout` property, it MUST determine the rendering dimensions as defined in Fixed-Layout Documents [ContentDocs301] .

› It MUST ignore proprietary metadata properties that pertain to layout expressions if they conflict behaviorally with the property semantics defined in Fixed-Layout Properties.

› 3.4 Package Document Definition

All elements [XML] defined in this section are in the `http://www.idpf.org/2007/opf` namespace [XMLNS] unless otherwise specified.

› 3.4.1 The `package` Element

The `package` element is the root container of the Package Document and encapsulates metadata and resource information for a Rendition.

Element Name

`package`

Usage

The `package` element is the root element of the Package Document.

Attributes

`version` [required]

Specifies the EPUB specification version to which the given Rendition conforms.

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

`unique-identifier` [required]

An IDREF [XML] that identifies the `dc:identifier` element that provides the package's preferred, or primary, identifier.

Refer to Publication Identifiers for more information.

`prefix` [optional]

Declaration mechanism for prefixes not reserved by this specification.

Refer to The `prefix` Attribute for more information.

`xml:lang` [optional]

Specifies the language used in the contents and attribute values of the carrying element and its descendants, as defined in section 2.12 Language Identification of [XML].

`dir` [optional]

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Specifies the base text direction of the content and attribute values of the carrying element and its descendants.

Inherent directionality specified using [Unicode] takes precedence over this attribute.

Allowed values are `ltr` (left-to-right) and `rtl` (right-to-left).

`id` [optional]

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

Content Model

In this order: `metadata` [required], `manifest` [required], `spine` [required], `guide` [optional/deprecated], `bindings` [optional], `collection` [0 or more]

› 3.4.2 The `metadata` Element

The `metadata` element encapsulates meta information for the given Rendition.

Element Name

`metadata`

Usage

Required first child of `package` .

Attributes

The `metadata` element has no attributes defined in this specification.

Content Model

In any order: `dc:identifier` [1 or more], `dc:title` [1 or more], `dc:language` [1 or more], `DCMES Optional Elements` [0 or more], `meta` [1 or more], `OPF2 meta` [0 or more], `link` [0 or more]

The minimal required metadata that each Rendition of an EPUB Publication MUST include consists of three elements from the Dublin Core Metadata Element Set [DCMES] — `title` , `identifier` and `language` — together with the `modified` property from DCMI Metadata Terms [DCTERMS]. Refer to the example at the end of this section for an instance of a complete minimal metadata set.

Additional optional metadata is expressed using the DCMES optional elements and the `meta` element.

› Examples

The following example represents the minimal set of metadata that all Renditions have to contain.

```
<package … unique-identifier="pub-id">
    …
    <metadata xmlns:dc="http://purl.org/dc/elements/1.1/" >
```

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```
        <dc:identifier id="pub-id">urn:uuid:A1B0D67E-2E81-4DF5-9E67-
A64CBE366809</dc:identifier>
        <dc:title>Norwegian Wood</dc:title>
        <dc:language>en</dc:language>
        <meta property="dcterms:modified">2011-01-01T12:00:00Z</meta>
    </metadata>
    …
</package>
```

› 3.4.3 The DCMES `identifier` Element

The [DCMES] `identifier` element contains a single identifier associated with the given Rendition of the EPUB Publication, such as a UUID, DOI, ISBN or ISSN.

Element Name

`dc:identifier`

Namespace

`http://purl.org/dc/elements/1.1/`

Usage

Required child of `metadata` . Repeatable.

Attributes

`id` [optional]

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

The `id` attribute is required on the `identifier` element containing the unique identifier. See below.

Content Model

Text

Every Rendition's `metadata` section MUST include at least one `identifier` element containing an unambiguous identifier for the EPUB Publication. Multiple `identifier` elements are permitted, but only one can be marked as the Unique Identifier via the `package` element `unique-identifier` attribute.

The following example shows the unique `identifier` element for an EPUB Publication.

```
<package … unique-identifier="pub-id">
    <metadata xmlns:dc="http://purl.org/dc/elements/1.1/">
        <dc:identifier id="pub-id">urn:uuid:A1B0D67E-2E81-4DF5-9E67-
A64CBE366809</dc:identifier>
        …
    </metadata>
</package>
```

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This specification makes a distinction between the Unique Identifier for an EPUB Publication and the identifier that uniquely identifies a specific version of it (i.e., to be able to differentiate different versions of the same EPUB Publication). Whenever a Rendition is modified, it MUST include a new last modified date.

To identify a specific version of a packaged EPUB Publication, a Release Identifier can be constructed by combining the Unique Identifier with the last modified date of the Rendition. For more information on the semantics and requirements of the Release Identifier, refer to Release Identifier.

Identifiers MAY differ from Rendition to Rendition.

This specification imposes no additional restrictions or requirements on identifiers except that they MUST be at least one character in length. It is strongly RECOMMENDED that all identifiers be fully qualified URIs, however.

Reading Systems MUST trim all leading and trailing whitespace from the element value, as defined by the XML specification [XML], before processing the value.

To determine whether an `identifier` conforms to an established system or has been granted by an issuing authority, Reading Systems SHOULD parse the value of the property. For additional precision (e.g., if the scheme cannot be determined from the value or could lead to an ambiguous result), Authors MAY attach an `identifier-type` property to assist in Reading System identification. When included, the `identifier-type` property SHOULD take precedence over value parsing the `identifier`.

The following example shows how an `identifier` can be additionally marked as a DOI using the `identifier-type` property.

```
<metadata xmlns:dc="http://purl.org/dc/elements/1.1/">
    <dc:identifier id="pub-
id">urn:doi:10.1016/j.iheduc.2008.03.001</dc:identifier>
    <meta refines="#pub-id" property="identifier-type"
scheme="onix:codelist5">06</meta>
    …
</metadata>
```

This specification does not require or endorse the use of any specific scheme for identifiers, and imposes no restrictions or requirements on `identifier-type` identifiers beyond those specified in the property definition.

When an EPUB Publication is derived from another publication, the identifier for that source publication MAY be included in the EPUB Publication metadata, and MUST be represented using the DCMES `source` element.

› 3.4.4 The DCMES `title` Element

The [DCMES] `title` element represents an instance of a name given to the EPUB Publication.

Element Name

`dc:title`

Namespace

`http://purl.org/dc/elements/1.1/`

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Usage

Required child of `metadata` . Repeatable.

Attributes

`id` [optional]

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

`xml:lang` [optional]

Specifies the language used in the contents and attribute values of the carrying element and its descendants, as defined in section 2.12 Language Identification of [XML].

`dir` [optional]

Specifies the base text direction of the content and attribute values of the carrying element and its descendants.

Inherent directionality specified using [Unicode] takes precedence over this attribute.

Allowed values are `ltr` (left-to-right) and `rtl` (right-to-left).

Content Model

Text

Every `metadata` section MUST include at least one `title` element containing the title for the EPUB Publication. Multiple `title` elements are permitted, but the `title-type` property SHOULD be attached to indicate the type of title (e.g., the main title of a work or a subtitle).

The following example shows how to indicate different title types.

```
<metadata xmlns:dc="http://purl.org/dc/elements/1.1/">
    …
    <dc:title id="t1">A Dictionary of Modern English Usage</dc:title>
    <meta refines="#t1" property="title-type">main</meta>

    <dc:title id="t2">First Edition</dc:title>
    <meta refines="#t2" property="title-type">edition</meta>

    <dc:title id="t3">Fowler's</dc:title>
    <meta refines="#t3" property="title-type">short</meta>
    …
</metadata>
```

When adding the `title-type` property, Authors SHOULD designate only one `title` element as containing the main title for the Publication. If no means of determining title types is provided, or understood, Reading Systems MUST treat the first `title` element in document order as the main title. This specification does not define how additional `title` elements SHOULD be processed in such situations.

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The optional `display-seq` property MAY also be attached to each `title` to indicate their primacy for display and other rendering purposes.

The following example shows how to indicate display sequence.

```
<metadata xmlns:dc="http://purl.org/dc/elements/1.1/">
    …
    <dc:title id="t1">The Red and the Black</dc:title>
    <meta refines="#t1" property="title-type">main</meta>
    <meta refines="#t1" property="display-seq">1</meta>

    <dc:title id="t2">A Chronicle of the Nineteenth Century</dc:title>
    <meta refines="#t2" property="title-type">subtitle</meta>
    <meta refines="#t2" property="display-seq">2</meta>

    <dc:title id="t3">A Chronicle of 1830</dc:title>
    <meta refines="#t3" property="title-type">subtitle</meta>
    <meta refines="#t3" property="display-seq">3</meta>
    …
</metadata>
```

Titles MAY differ from Rendition to Rendition.

This specification imposes no additional restrictions or requirements on titles except that they MUST be at least one character in length.

Reading Systems MUST trim all leading and trailing whitespace from the element value, as defined by the XML specification [XML], before processing the value.

› Examples

The following example shows how the title "THE LORD OF THE RINGS, Part One: The Fellowship of the Ring" could be classified.

```
<metadata xmlns:dc="http://purl.org/dc/elements/1.1/">
    <dc:title id="t1">The Fellowship of the Ring</dc:title>
    <meta refines="#t1" property="title-type">main</meta>

    <dc:title id="t2">The Lord of the Rings</dc:title>
    <meta refines="#t2" property="title-type">collection</meta>

    <dc:title id="t3">THE LORD OF THE RINGS, Part One: The Fellowship of
the Ring</dc:title>
    <meta refines="#t3" property="title-type">expanded</meta>
    …
</metadata>
```

The following example shows how the complex title "The Great Cookbooks of the World: Mon premier guide de cuisson, un Mémoire. The New French Cuisine Masters, Volume Two. Special Anniversary Edition" could be classified.

```
<metadata xmlns:dc="http://purl.org/dc/elements/1.1/">
    <dc:title id="t1" xml:lang="fr">Mon premier guide de cuisson, un
Mémoire</dc:title>
    <meta refines="#t1" property="title-type">main</meta>
```

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```
    <meta refines="#t1" property="display-seq">2</meta>

    <dc:title id="t2">The Great Cookbooks of the World</dc:title>
    <meta refines="#t2" property="title-type">collection</meta>
    <meta refines="#t2" property="display-seq">1</meta>

    <dc:title id="t3">The New French Cuisine Masters</dc:title>
    <meta refines="#t3" property="title-type">collection</meta>
    <meta refines="#t3" property="display-seq">3</meta>

    <dc:title id="t4">Special Anniversary Edition</dc:title>
    <meta refines="#t4" property="title-type">edition</meta>
    <meta refines="#t4" property="display-seq">4</meta>

    <dc:title id="t5">The Great Cookbooks of the World:
        Mon premier guide de cuisson, un Mémoire.
        The New French Cuisine Masters, Volume Two.
        Special Anniversary Edition</dc:title>
    <meta refines="#t5" property="title-type">expanded</meta>
    …
</metadata>
```

› 3.4.5 The DCMES `language` Element

The [DCMES] `language` element specifies the language of the content of the given Rendition.

Element Name

`dc:language`

Namespace

`http://purl.org/dc/elements/1.1/`

Usage

Required child of `metadata` .

Attributes

`id` [optional]

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

Content Model

Text

Each Rendition's `metadata` section MUST include at least one `language` element with a value conforming to [RFC5646].

The following example shows an EPUB Publication is in U.S. English.

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```
<metadata xmlns:dc="http://purl.org/dc/elements/1.1/">
    …
    <dc:language>en-US</dc:language>
    …
</metadata>
```

Additional `language` elements MAY be included for multilingual Publications, but each element's value MUST conform to [RFC5646].

Languages MAY differ from Rendition to Rendition.

Reading Systems MUST trim all leading and trailing whitespace from the element value, as defined by the XML specification [XML], before processing the value.

› 3.4.6 The DCMES Optional Elements

All elements from the [DCMES] element set — except for `identifier` , `language` and `title` , as defined above — are designated as optional. These elements all conform to the following generalized definition:

Element Name

`contributor` | `coverage` | `creator` | `date` | `description` | `format` | `publisher` | `relation` | `rights` | `source` | `subject` | `type`

Namespace

`http://purl.org/dc/elements/1.1/`

Usage

Optional child of `metadata` . Repeatable.

Attributes

`id` [optional]

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

`xml:lang`* [optional]

Specifies the language used in the contents and attribute values of the carrying element and its descendants, as defined in section 2.12 Language Identification of [XML].

`dir`* [optional]

Specifies the base text direction of the content and attribute values of the carrying element and its descendants.

Inherent directionality specified using [Unicode] takes precedence over this attribute.

Allowed values are `ltr` (left-to-right) and `rtl` (right-to-left).

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Content Model

Text

* The `xml:lang` and `dir` attributes are permitted only on the following elements: `contributor`, `coverage`, `creator`, `description`, `publisher`, `relation`, `rights` and `subject`.

Optional metadata MAY differ from Rendition to Rendition.

The value of all optional [DCMES] elements MUST be at least one character in length.

Reading Systems MUST trim all leading and trailing whitespace from the element value, as defined by the XML specification [XML], before processing the value.

Except as detailed below, this specification does not modify the [DCMES] definitions for these elements.

› The DCMES `contributor` Element

The `contributor` element is used to represent the name of a person, organization, etc. that played a secondary role in the creation of the content of an EPUB Publication.

The use of the `contributor` element is identical to the use of the `creator` element in all other respects, as detailed in the next section.

› The DCMES `creator` Element

The `creator` element represents the name of a person, organization, etc. responsible for the creation of the content of an EPUB Publication. The `role` property can be attached to the element to indicate the function the creator played in the creation of the content.

The following example shows how to represent a `creator` as an author using a MARC relators term.

```
<metadata xmlns:dc="http://purl.org/dc/elements/1.1/">
    …
    <dc:creator id="creator">Haruki Murakami</dc:creator>
    <meta refines="#creator" property="role" scheme="marc:relators"
id="role">aut</meta>
    …
</metadata>
```

The `creator` element SHOULD contain the name of the creator as a Reading System will present it to a User. The `file-as` property MAY be attached to include a normalized form of the name, and the `alternate-script` property can be used to represent a creator's name in another language or script.

The following example shows the different ways a creator's name can be included to facilitate processing and rendering.

```
<metadata xmlns:dc="http://purl.org/dc/elements/1.1/">
    …
    <dc:creator id="creator">Haruki Murakami</dc:creator>
    <meta refines="#creator" property="role" scheme="marc:relators"
id="role">aut</meta>
```

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