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The 'XML2RFC' version 3 Vocabulary
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Abstract

This document defines the 'XML2RFC' version 3 vocabulary; an XML-based language used for writing RFCs and Internet-Drafts. It is heavily derived from the version 2 vocabulary that is also under discussion.

Editorial Note (To be removed by RFC Editor)

Discussion of this draft takes place on the rfc-interest mailing list (rfc-interest@rfc-editor.org), which has its home page at <https://www.rfc-editor.org/mailman/listinfo/rfc-interest>.

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Table of Contents

1.	Introduction	4
1.1.	Differences from v2 to v3	4
1.2.	Syntax Notation	5
2.	Elements	5
2.1.	<abstract>	5
2.2.	<address>	5
2.3.	<annotation>	6
2.4.	<area>	6
2.5.	<artwork>	7
2.6.	<author>	9
2.7.		10
2.8.	<back>	11
2.9.	<c>	11
2.10.	<city>	12
2.11.	<code>	12
2.12.	<country>	12
2.13.	<cref>	12
2.14.	<date>	13
2.15.	<email>	14
2.16.	<eref>	14
2.17.	<facsimile>	14
2.18.	<figure>	15
2.19.	<format>	16
2.20.	<front>	17
2.21.	<i>	17
2.22.	<ieref>	18
2.23.	<keyword>	19
2.24.	<list>	19
2.25.	<middle>	21
2.26.	<note>	21
2.27.	<organization>	22
2.28.	<phone>	22
2.29.	<postal>	22
2.30.	<postalbody>	23
2.31.	<postamble>	23
2.32.	<preamble>	24
2.33.	<reference>	24
2.34.	<references>	25
2.35.	<region>	25

Hoffman

Expires August 1, 2014

[Page 2]

2.36.	<rfc>	26
2.37.	<section>	29
2.38.	<seriesInfo>	30
2.39.	<street>	31
2.40.	<t>	31
2.41.	<texttable>	32
2.42.	<title>	33
2.43.	<tt>	34
2.44.	<ttable>	34
2.45.	<uri>	35
2.46.	<vspace>	35
2.47.	<workgroup>	36
2.48.	<xref>	36
3.	Special Unicode Code Points	37
4.	Internationalization Considerations	37
5.	Security Considerations	37
6.	IANA Considerations	37
6.1.	Internet Media Type Registration	37
7.	Acknowledgments	39
8.	References	39
8.1.	Normative References	39
8.2.	Informative References	39
Appendix A.	Front Page Generation	41
A.1.	The /rfc/@category Attribute	41
A.2.	The /rfc/@ipr Attribute	41
A.2.1.	Current Values: '*trust200902'	42
A.2.2.	Historic Values	44
Appendix B.	Relax NG Schema	44
Index		50

1. Introduction

This document describes version 3 ('v3') of the 'XML2RFC' vocabulary; an XML-based language ('Extensible Markup Language', [[XML](#)]) used for writing RFCs ([[RFCSTYLE](#)]) and Internet-Drafts ([[IDGUIDE](#)]).

This document obsoletes the version ("v2") vocabulary [[XML2RFCv2](#)], which contains the extended language definition. That document in turn obsoletes the original version ("v1") [[RFC2629](#)]. This document directly copies the material from [[XML2RFCv2](#)] where possible; as that document makes its way toward RFC publication, this document will incorporate as many of the changes as possible.

Note that the vocabulary contains certain constructs that might not be used when generating the final text; however, they can provide useful data for other uses (such index generation, populating a keyword database, or syntax checks).

1.1. Differences from v2 to v3

The following is a hopefully-complete list of all the technical changes between [[XML2RFCv2](#)] and this document. Note that the list is for the current version of this document only. There are *many* additional changes that are expected to the v3 vocabulary that are being discussed. Also note that changes to the design choices for the differences are also expected.

- o In <address>, allowed the sub-elements to be in any order.
- o In <artwork> and <author>, added optional "xml:lang" attribute.
- o Added the , <i>, and <tt> elements.
- o In <front>, made <date> optional.
- o In <postal>, allowed the sub-elements to be in any order. Also allowed the inclusion of <postalbody>.
- o Added <postalbody>, free text that represents the address.
- o In <section>, added the optional "numbered" and "removeinrfc" attributes.
- o Removed the <spanx> element, and replaced it with , <i>, and <tt>.
- o In <ttcol>, added <xref>, <eref>, <iref>, and <ceref> as optional children.

1.2. Syntax Notation

The XML vocabulary here is defined in prose, based on the Relax NG schema ([\[RNC\]](#)) contained in [Appendix B](#) (specified in Relax NG Compact Notation, "RNC").

Note that the schema can be used for automated validity checks, but certain constraints are only described in prose (example: the conditionally required presence of the "abbrev" attribute).

2. Elements

[[anchor2: In the section below, some elements/attributes do not have a prose description yet. This is because this is work-in-progress; feedback with accurate descriptions is appreciated.]]

The sections below describe all elements and their attributes.

Note that attributes not labeled "mandatory" are optional.

2.1. <abstract>

Contains the abstract of the document. The abstract ought to be self-contained and thus should not contain references or unexpanded abbreviations. See Section 4.3 of [\[RFCSTYLE\]](#) for more information.

This element appears as child element of: <front> ([Section 2.20](#)).

Content model:

One or more <t> elements ([Section 2.40](#))

2.2. <address>

Provides address information for the author.

This element appears as child element of: <author> ([Section 2.6](#)).

Content model:

In any order:

- o <postal> elements ([Section 2.29](#))
- o <phone> elements ([Section 2.28](#))
- o <facsimile> elements ([Section 2.17](#))

- o <email> elements ([Section 2.15](#))
- o <uri> elements ([Section 2.45](#))

2.3. <annotation>

Provides additional prose augmenting a bibliographical reference.

For instance:

```
<annotation>
  Latest version available at <eref
  target='http://www.w3.org/TR/xml'/>.
</annotation>
```

...will generate the text used in the reference for [[XML](#)].

This element appears as child element of: <reference> ([Section 2.33](#)).

Content model:

In any order:

- o Text
- o <xref> elements ([Section 2.48](#))
- o <eref> elements ([Section 2.16](#))
- o <iref> elements ([Section 2.22](#))
- o <cref> elements ([Section 2.13](#))
- o <tt> elements ([Section 2.43](#))
- o elements ([Section 2.7](#))
- o <i> elements ([Section 2.21](#))

2.4. <area>

Provides information about the IETF area this document applies to (currently not used when generating documents).

This element appears as child element of: <front> ([Section 2.20](#)).

Content model: only text content.

2.5. <artwork>

This element allows the inclusion of "artwork" into the document.

<artwork> provides full control of horizontal whitespace and line breaks, and thus is used for a variety of things, such as:

- o diagrams ("line art"),
- o source code,
- o formal languages (such as ABNF or the RNC notation used in this document),
- o complex tables, or
- o protocol unit diagrams.

Alternatively, the "src" attribute allows referencing an external graphics file, such as a bitmap or a vector drawing. In this case, the textual content acts as fallback for output formats that do not support graphics, and thus ought to contain either a "line art" variant of the graphics, or otherwise prose that describes the included image in sufficient detail. Note that RFCs occasionally are published with enhanced diagrams; a recent example is [[RFC5598](#)].

This element appears as child element of: <figure> ([Section 2.18](#)).

Content model:

Text

2.5.1. 'align' attribute

Controls whether the artwork appears left (default), centered, or right.

Allowed values:

- o "left" (default)
- o "center"
- o "right"

[2.5.2.](#) **'alt' attribute**

Alternative text description of the artwork (not just the caption).

[2.5.3.](#) **'height' attribute**

The suggested height of the graphics included using the "src" attribute.

This attribute is format-dependent and ought to be avoided.

When generating HTML output, current implementations copy the attribute "as is". For other output formats it is usually ignored.

[2.5.4.](#) **'name' attribute**

A filename suitable for the contents (such as for extraction to a local file).

This attribute generally isn't used for document generation, but it can be helpful for other kinds of tools (such as automated syntax checkers which work by extracting the source code).

[2.5.5.](#) **'src' attribute**

The URI of a graphics file.

Note that this can be a "data" URI ([[RFC2397](#)]) as well, in which case the graphics file essentially is in-lined.

[2.5.6.](#) **'type' attribute**

Specifies the type of the artwork.

The value either is a well-known keyword (such as "abnf"), or an Internet Media Type (see [[RFC2046](#)]).

How it is used depends on context and application. For instance, a formatter can attempt to syntax-highlight code in certain known languages.

[2.5.7.](#) **'width' attribute**

The suggested width of the graphics included using the "src" attribute.

This attribute is format-dependent and ought to be avoided.

When generating HTML output, current implementations copy the attribute "as is". For other output formats it is usually ignored.

[2.5.8.](#) 'xml:lang' attribute

Allows specification of the language used. This is sometimes useful for renderers which display different fonts for CJK characters.

[2.5.9.](#) 'xml:space' attribute

Determines whitespace handling.

"preserve" is both the default value and the only meaningful setting anyway (because that's what the <artwork> element is for).

See also Section 2.10 of [[XML](#)].

Allowed values:

- o "default"
- o "preserve" (default)

[2.6.](#) <author>

Provides information about a document author.

The <author> elements contained within the document's <front> element are used to fill the boilerplate, and also to generate the "Author's Address" section (see Section 4.9 of [[RFCSTYLE](#)]).

Note that an "author" can also be just an organization (by not specifying any of the name attributes, but adding the <organization> child element).

Furthermore, the "role" attribute can be used to mark an author as "editor". This is reflected both on the front page and in bibliographical references. Note that this specification does not define a precise meaning for the term "editor".

See Section "Authors vs. Contributors" of [[RFCPOLICY](#)] for more information.

This element appears as child element of: <front> ([Section 2.20](#)).

Content model:

In this order:

1. One optional <organization> element ([Section 2.27](#))
2. One optional <address> element ([Section 2.2](#))

[2.6.1.](#) 'fullname' attribute

The full name (used in the automatically generated "Author's Address" section).

[2.6.2.](#) 'initials' attribute

Author initials (used on the front page and in references).

Initials should be provided as a whitespace separated list of pairs of a letter and a dot.

[2.6.3.](#) 'role' attribute

Specifies the role the author had in creating the document.

Allowed values:

- o "editor"

[2.6.4.](#) 'surname' attribute

The author's surname.

[2.6.5.](#) 'xml:lang' attribute

Allows specification of the language used. This is sometimes useful for renderers which display different fonts for CJK characters.

[2.7.](#)

Causes the text to be displayed in a bold font.

This element appears as child element of: <annotation> ([Section 2.3](#)), <c> ([Section 2.9](#)), <i> ([Section 2.21](#)), <postamble> ([Section 2.31](#)), <preamble> ([Section 2.32](#)), <t> ([Section 2.40](#)), and <tt> ([Section 2.43](#)).

Content model:

In any order:

- o Text

- o `<xref>` elements ([Section 2.48](#))
- o `<eref>` elements ([Section 2.16](#))
- o `<iref>` elements ([Section 2.22](#))
- o `<cref>` elements ([Section 2.13](#))
- o `<tt>` elements ([Section 2.43](#))
- o `<i>` elements ([Section 2.21](#))

2.8. `<back>`

Contains the "back" part of the document: the references and appendices.

This element appears as child element of: `<rfc>` ([Section 2.36](#)).

Content model:

In this order:

1. Optional `<references>` elements ([Section 2.34](#))
2. Optional `<section>` elements ([Section 2.37](#))

2.9. `<c>`

Provides the content of a cell in a table.

This element appears as child element of: `<texttable>` ([Section 2.41](#)).

Content model:

In any order:

- o Text
- o `<xref>` elements ([Section 2.48](#))
- o `<eref>` elements ([Section 2.16](#))
- o `<iref>` elements ([Section 2.22](#))
- o `<cref>` elements ([Section 2.13](#))

- o `<tt>` elements ([Section 2.43](#))
- o `` elements ([Section 2.7](#))
- o `<i>` elements ([Section 2.21](#))

[2.10.](#) `<city>`

Gives the city name in a postal address.

This element appears as child element of: `<postal>` ([Section 2.29](#)).

Content model: only text content.

[2.11.](#) `<code>`

Gives the postal region code.

This element appears as child element of: `<postal>` ([Section 2.29](#)).

Content model: only text content.

[2.12.](#) `<country>`

Gives the country in a postal address.

This element appears as child element of: `<postal>` ([Section 2.29](#)).

Content model: only text content.

[2.13.](#) `<cref>`

Represents a comment.

Comments can be used in a document while it is work-in-progress.

They usually appear either visually highlighted, at the end of the document (depending on file format and settings of the formatter), or not at all (when generating an RFC).

This element appears as child element of: `<annotation>` ([Section 2.3](#)), `` ([Section 2.7](#)), `<c>` ([Section 2.9](#)), `<i>` ([Section 2.21](#)), `<postamble>` ([Section 2.31](#)), `<preamble>` ([Section 2.32](#)), `<t>` ([Section 2.40](#)), `<tt>` ([Section 2.43](#)), and `<ttcol>` ([Section 2.44](#)).

Content model: only text content.

[2.13.1.](#) 'anchor' attribute

`[[element.cref.attribute.anchor.missing: attribute description missing]]`

[2.13.2.](#) 'source' attribute

Holds the "source" of a comment, such as the name or the initials of the person who made the comment.

[2.14.](#) <date>

Provides information about the publication date.

Note that this element is used both for the boilerplate of the document being produced, and also inside bibliographic references.

In the first case, it defines the publication date, which, when producing Internet-Drafts, will be used for computing the expiration date (see Section 8 of [IDGUIDE](#)). When "year", "month" or "day" are left out, the processor will attempt to use the current system date if the attributes that are specified do match the system date.

Note that month names need to match the full (English) month name ("January", "February", "March", "April", "May", "June", "July", "August", "September", "October", "November", or "December") in order for expiration calculations to work (some implementations might support additional formats, though).

In the second case, the date information will be embedded as-is into the reference text. Therefore, also vague dates ("ca. 2000"), date ranges, and so on, are allowed.

This element appears as child element of: <front> ([Section 2.20](#)).

Content model: this element does not have any contents.

[2.14.1.](#) 'day' attribute

Day of publication.

[2.14.2.](#) 'month' attribute

Month of publication.

2.14.3. 'year' attribute

Year of publication.

2.15. <email>

Provides an email address.

The value is expected to be the scheme-specific part of a "mailto" URI (so does not include the prefix "mailto:"). See [Section 2 of \[RFC6068\]](#) for details.

This element appears as child element of: <address> ([Section 2.2](#)).

Content model: only text content.

2.16. <eref>

Represents an "external" link (as specified in the "target" attribute).

If the element has text content, that content will be used. Otherwise, the value of the target attribute will be inserted in angle brackets ([\[RFC3986\]](#), [Appendix C](#)).

This element appears as child element of: <annotation> ([Section 2.3](#)), ([Section 2.7](#)), <c> ([Section 2.9](#)), <i> ([Section 2.21](#)), <postamble> ([Section 2.31](#)), <preamble> ([Section 2.32](#)), <t> ([Section 2.40](#)), <tt> ([Section 2.43](#)), and <ttcol> ([Section 2.44](#)).

Content model: only text content.

2.16.1. 'target' attribute (mandatory)

URI of the link target (see [Section 3 of \[RFC3986\]](#)).

2.17. <facsimile>

Represents the phone number of a fax machine.

The value is expected to be the scheme-specific part of a "tel" URI (so does not include the prefix "tel:"), using the "global numbers" syntax. See [Section 3 of \[RFC3966\]](#) for details.

This element appears as child element of: <address> ([Section 2.2](#)).

Content model: only text content.

[2.18.](#) <figure>

[[element.figure.missing: element description missing]]

This element appears as child element of: <section> ([Section 2.37](#)), and <t> ([Section 2.40](#)).

Content model:

In this order:

1. Optional <iref> elements ([Section 2.22](#))
2. One optional <preamble> element ([Section 2.32](#))
3. One <artwork> element ([Section 2.5](#))
4. One optional <postamble> element ([Section 2.31](#))

[2.18.1.](#) 'align' attribute

Used to change the alignment of <preamble> and <postamble>.

Note: does not affect title or <artwork> alignment.

Allowed values:

- o "left" (default)
- o "center"
- o "right"

[2.18.2.](#) 'alt' attribute

Duplicates functionality available on <artwork>; avoid it.

[2.18.3.](#) 'anchor' attribute

[[element.figure.attribute.anchor.missing: attribute description missing]]

[2.18.4.](#) 'height' attribute

Duplicates functionality available on <artwork>; avoid it.

[2.18.5.](#) 'src' attribute

Duplicates functionality available on <artwork>; avoid it.

[2.18.6.](#) 'suppress-title' attribute

Figures that have an "anchor" attribute will automatically get an autogenerated title (such as "Figure 1"). Setting this attribute to "false" will prevent this.

Allowed values:

- o "true"
- o "false" (default)

[2.18.7.](#) 'title' attribute

[[element.figure.attribute.title.missing: attribute description missing]]

[2.18.8.](#) 'width' attribute

Duplicates functionality available on <artwork>; avoid it.

[2.19.](#) <format>

Provides a link to an additional format variant for a reference.

Note that these additional links are neither used in published RFCs, nor supported by all tools. If the goal is to provide a single URI for a reference, the "target" attribute on <reference> can be used instead.

This element appears as child element of: <reference> ([Section 2.33](#)).

Content model: this element does not have any contents.

[2.19.1.](#) 'octets' attribute

Octet length of linked-to document.

[2.19.2.](#) 'target' attribute

URI of document.

[[anchor3: Why is this optional?]]

2.19.3. 'type' attribute (mandatory)

The type of the linked-to document, such as "TXT", "HTML", or "PDF".

2.20. <front>

Represent the "front matter": metadata (such as author information), abstract, and additional notes.

This element appears as child element of: <reference> ([Section 2.33](#)), and <rfc> ([Section 2.36](#)).

Content model:

In this order:

1. One <title> element ([Section 2.42](#))
2. One or more <author> elements ([Section 2.6](#))
3. One optional <date> element ([Section 2.14](#))
4. Optional <area> elements ([Section 2.4](#))
5. Optional <workgroup> elements ([Section 2.47](#))
6. Optional <keyword> elements ([Section 2.23](#))
7. One optional <abstract> element ([Section 2.1](#))
8. Optional <note> elements ([Section 2.26](#))

2.21. <i>

Causes the text to be displayed in an italic font.

This element appears as child element of: <annotation> ([Section 2.3](#)), ([Section 2.7](#)), <c> ([Section 2.9](#)), <postamble> ([Section 2.31](#)), <preamble> ([Section 2.32](#)), <t> ([Section 2.40](#)), and <tt> ([Section 2.43](#)).

Content model:

In any order:

- o Text

- o <xref> elements ([Section 2.48](#))
- o <eref> elements ([Section 2.16](#))
- o <iref> elements ([Section 2.22](#))
- o <cref> elements ([Section 2.13](#))
- o elements ([Section 2.7](#))
- o <tt> elements ([Section 2.43](#))

[2.22.](#) <iref>

Provides terms for the document's index.

Index entries can be either single items (when just the "item" attribute is given) or nested items (by specifying "subitem" as well).

For instance:

```
<iref item="Grammar" subitem="item"/>
```

will produce an index entry for "Grammar, item".

This element appears as child element of: <annotation> ([Section 2.3](#)), ([Section 2.7](#)), <c> ([Section 2.9](#)), <figure> ([Section 2.18](#)), <i> ([Section 2.21](#)), <postamble> ([Section 2.31](#)), <preamble> ([Section 2.32](#)), <section> ([Section 2.37](#)), <t> ([Section 2.40](#)), <tt> ([Section 2.43](#)), and <ttcol> ([Section 2.44](#)).

Content model: this element does not have any contents.

[2.22.1.](#) 'item' attribute (mandatory)

The item to include.

[2.22.2.](#) 'primary' attribute

Setting this to "true" declares the occurrence as "primary", which might cause it to be highlighted in the index.

Allowed values:

- o "true"

- o "false" (default)

[2.22.3.](#) 'subitem' attribute

The subitem to include.

[2.23.](#) <keyword>

Specifies a keyword applicable to the document.

Note that each element should only contain a single keyword; for multiple keywords, the element can simply be repeated.

Keywords are used both in the RFC Index and in the metadata of generated document formats.

This element appears as child element of: <front> ([Section 2.20](#)).

Content model: only text content.

[2.24.](#) <list>

Delineates a text list.

Each list item is represented by a <t> element. The vocabulary currently does not directly support list items consisting of multiple paragraphs; if this is needed, <vspace> ([Section 2.46](#)) can be used as workaround.

This element appears as child element of: <t> ([Section 2.40](#)).

Content model:

One or more <t> elements ([Section 2.40](#))

[2.24.1.](#) 'counter' attribute

This attribute holds a token that serves as an identifier for a counter. The intended use is continuation of lists.

Note that this attribute functions only when the style attribute is using the "format..." syntax ([Section 2.24.3](#)); otherwise, it is ignored.

[2.24.2.](#) 'hangIndent' attribute

For list styles with potentially wide labels, this attribute can override the default indentation level, measured in characters.

Note that it only affects style with variable-width labels ("format..." and "hanging", see below), and it may not affect formats in which the list item text appears below the label.

2.24.3. 'style' attribute

This attribute is used to control the display of a list.

The value of this attribute is inherited by any nested lists that do not have this attribute set. It may be set to:

"empty" (or not set)

For unlabeled list items; it can also be used for indentation purposes (this is the default value).

"hanging"

For lists where the items are labeled with a piece of text.

The label text is specified in the 'hangText' attribute of the <t> element ([Section 2.40.2](#)).

"letters"

For ordered lists using letters as labels (lowercase letters followed by a period; after "z", it rolls over to a two-letter format). For nested lists, processors usually flip between uppercase and lowercase.

"numbers"

For ordered lists using numbers as labels.

"symbols"

For unordered (bulleted) lists.

The style of the bullets is chosen automatically by the processor (some implementations allow overriding the default using a processing instruction).

And, finally:

"format ..."

For lists with customized labels, consisting of fixed text and an item counter in various formats.

The value is a free-form text that allows counter values to be inserted using a "percent-letter" format. For instance, "[REQ%d]" generates labels of the form "[REQ1]", where "%d" inserts the item number as decimal number.

The following formats are supported:

%c lowercase letters (a, b, c, etc.)

%C uppercase letters (A, B, C, etc.)

%d decimal numbers (1, 2, 3, etc.)

%i lowercase Roman numerals (i, ii, iii, etc.)

%I uppercase Roman numerals (I, II, III, etc.)

%% represents a percent sign

Other formats are reserved for future use.

[2.25.](#) <middle>

Represents the main content of the document.

This element appears as child element of: <rfc> ([Section 2.36](#)).

Content model:

One or more <section> elements ([Section 2.37](#))

[2.26.](#) <note>

Creates an unnumbered section that appears after the abstract.

It is usually used for additional information to reviewers (working group information, mailing list, ...), or for additional publication information such as "IESG Notes".

This element appears as child element of: <front> ([Section 2.20](#)).

Content model:

One or more <t> elements ([Section 2.40](#))

[2.26.1.](#) 'title' attribute (mandatory)

The title of the note.

[2.27.](#) <organization>

Specifies the affiliation of an author.

This information appears in both the "Author's Address" section and on the front page ([\[RFCSTYLE\]](#), Section 4.1.2). If the value is long, an abbreviated variant can be specified in the "abbrev" attribute.

This element appears as child element of: <author> ([Section 2.6](#)).

Content model: only text content.

[2.27.1.](#) 'abbrev' attribute

Abbreviated variant.

[2.28.](#) <phone>

Represents a phone number.

The value is expected to be the scheme-specific part of a "tel" URI (so does not include the prefix "tel:"), using the "global numbers" syntax. See [Section 3 of \[RFC3966\]](#) for details.

This element appears as child element of: <address> ([Section 2.2](#)).

Content model: only text content.

[2.29.](#) <postal>

Contains optional child elements providing postal information. These elements will be displayed in an order that is processor-specific. Thus, a postal address should probably contain only a set of <street>, <city>, <region>, <code>, and <country> elements, or only a single <postalbody> element, but not both.

This element appears as child element of: <address> ([Section 2.2](#)).

Content model:

In any order:

- o <street> elements ([Section 2.39](#))

- o <city> elements ([Section 2.10](#))
- o <region> elements ([Section 2.35](#))
- o <code> elements ([Section 2.11](#))
- o <country> elements ([Section 2.12](#))
- o <postalbody> elements ([Section 2.30](#))

[2.30.](#) <postalbody>

A method for presenting a postal address without using <street>, <city>, <region>, <code>, and <country> elements. Processors will maintain horizontal whitespace and line breaks in the text of the <postalbody> element.

This element appears as child element of: <postal> ([Section 2.29](#)).

Content model: only text content.

[2.31.](#) <postamble>

Gives text that appears at the bottom of a figure or table.

This element appears as child element of: <figure> ([Section 2.18](#)), and <texttable> ([Section 2.41](#)).

Content model:

In any order:

- o Text
- o <xref> elements ([Section 2.48](#))
- o <eref> elements ([Section 2.16](#))
- o <iref> elements ([Section 2.22](#))
- o <cref> elements ([Section 2.13](#))
- o <tt> elements ([Section 2.43](#))
- o elements ([Section 2.7](#))
- o <i> elements ([Section 2.21](#))

2.32. <preamble>

Gives text that appears at the top of a figure or table.

This element appears as child element of: <figure> ([Section 2.18](#)), and <texttable> ([Section 2.41](#)).

Content model:

In any order:

- o Text
- o <xref> elements ([Section 2.48](#))
- o <eref> elements ([Section 2.16](#))
- o <iref> elements ([Section 2.22](#))
- o <cref> elements ([Section 2.13](#))
- o <tt> elements ([Section 2.43](#))
- o elements ([Section 2.7](#))
- o <i> elements ([Section 2.21](#))

2.33. <reference>

Represents a bibliographical reference.

This element appears as child element of: <references> ([Section 2.34](#)).

Content model:

In this order:

1. One <front> element ([Section 2.20](#))
2. Optional <seriesInfo> elements ([Section 2.38](#))
3. Optional <format> elements ([Section 2.19](#))
4. Optional <annotation> elements ([Section 2.3](#))

[2.33.1.](#) 'anchor' attribute

[[element.reference.attribute.anchor.missing: attribute description missing]]

[2.33.2.](#) 'target' attribute

Holds the URI for the reference.

Note that depending on the <seriesInfo> element, a URI might not be needed, nor desirable, as it can be automatically generated (for instance, for RFCs).

[2.34.](#) <references>

Contains a set of bibliographical references.

In the early days of the RFC series, there was only one "References" section per RFC. This convention was later changed to group references into two sets, "Normative" and "Informative"; see item x of Section 4.8 of [[RFCSTYLE](#)]). This vocabulary supports the split with the "title" attribute.

This element appears as child element of: <back> ([Section 2.8](#)).

Content model:

One or more <reference> elements ([Section 2.33](#))

[2.34.1.](#) 'title' attribute

Provides the title for the References section (defaulting to "References").

In general, the title should be either "Normative References" or "Informative References".

[2.35.](#) <region>

Provides the region name in a postal address.

This element appears as child element of: <postal> ([Section 2.29](#)).

Content model: only text content.

2.36. <rfc>

This is the root element of the xml2rfc vocabulary.

Processors distinguish between RFC mode ("number" attribute being present) and Internet-Draft mode ("docName" attribute being present): it is invalid to specify both. Setting neither "number" nor "docName" can be useful for producing other types of document but is out-of-scope for this specification.

Content model:

In this order:

1. One <front> element ([Section 2.20](#))
2. One <middle> element ([Section 2.25](#))
3. One optional <back> element ([Section 2.8](#))

2.36.1. 'category' attribute

Document category (see [Appendix A.1](#)).

Allowed values:

- o "std"
- o "bcp"
- o "info"
- o "exp"
- o "historic"

2.36.2. 'consensus' attribute

Affects the generated boilerplate.

See [[RFC5741](#)] for more information.

Allowed values:

- o "no"
- o "yes"

2.36.3. 'docName' attribute

For Internet-Drafts, this specifies the draft name (which appears below the title).

Note that the file extension is not part of the draft, so in general it should end with the current draft number ("-#", plus two digits).

Furthermore, it is good practice to disambiguate current editor copies from submitted drafts (for instance, by replacing the draft number with the string "latest").

See Section 7 of [[IDGUIDE](#)] for further information.

2.36.4. 'ipr' attribute

Represents the Intellectual Property status of the document. See [Appendix A.2](#) for details.

Allowed values:

- o "full2026"
- o "noDerivativeWorks2026"
- o "none"
- o "full3667"
- o "noModification3667"
- o "noDerivatives3667"
- o "full3978"
- o "noModification3978"
- o "noDerivatives3978"
- o "trust200811"
- o "noModificationTrust200811"
- o "noDerivativesTrust200811"
- o "trust200902"

- o "noModificationTrust200902"
- o "noDerivativesTrust200902"
- o "pre5378Trust200902"

2.36.5. 'iprExtract' attribute

Identifies a Section within the document for which extraction "as-is" is explicitly allowed (only relevant for historic values of the "ipr" attribute).

2.36.6. 'number' attribute

The number of the RFC to be produced.

2.36.7. 'obsoletes' attribute

A comma-separated list of RFC numbers or Internet-Draft names.

2.36.8. 'seriesNo' attribute

When producing a document within document series (such as "STD"): the number within that series.

2.36.9. 'submissionType' attribute

The document stream.

See [Section 2 of \[RFC5741\]](#) for details.

Allowed values:

- o "IETF" (default)
- o "IAB"
- o "IRTF"
- o "independent"

2.36.10. 'updates' attribute

A comma-separated list of RFC numbers or Internet-Draft names.

2.36.11. 'xml:lang' attribute

The natural language used in the document (defaults to "en").

See Section 2.12 of [[XML](#)] for more information.

2.37. <section>

Represents a section (when inside a <middle> element) or an appendix (when inside a <back> element).

Sub-sections are created by nesting <section> elements inside <section> elements.

This element appears as child element of: <back> ([Section 2.8](#)), <middle> ([Section 2.25](#)), and <section> ([Section 2.37](#)).

Content model:

In this order:

1. In any order:
 - * <t> elements ([Section 2.40](#))
 - * <figure> elements ([Section 2.18](#))
 - * <texttable> elements ([Section 2.41](#))
 - * <iref> elements ([Section 2.22](#))
2. Optional <section> elements ([Section 2.37](#))

2.37.1. 'anchor' attribute

[[element.section.attribute.anchor.missing: attribute description missing]]

2.37.2. 'numbered' attribute

If set to "no", this section does not get a section number. Processors will verify that such a section is not followed by a numbered section in a part, and will verify that the section is a top-level section.

Allowed values:

- o "yes" (default)
- o "no"

2.37.3. 'removeinrfc' attribute

If set to "yes", this section is marked in the processor with text indicating that it should be removed before the document is published as an RFC.

Allowed values:

- o "yes"
- o "no" (default)

2.37.4. 'title' attribute (mandatory)

The title of the section.

2.37.5. 'toc' attribute

Determines whether the section is included in the Table Of Contents.

[[anchor4: Need to consider inheritance.]]

Allowed values:

- o "include"
- o "exclude"
- o "default" (default)

2.38. <seriesInfo>

Specifies the document series in which this document appears, and also specifies an identifier within that series.

This element appears as child element of: <reference> ([Section 2.33](#)).

Content model: this element does not have any contents.

2.38.1. 'name' attribute (mandatory)

The name of the series.

The following names trigger specific processing (such as for auto-

generating links, and adding descriptions such as "work in progress"): "BCP", "FYI", "Internet-Draft", "RFC", and "STD".

[2.38.2.](#) 'value' attribute (mandatory)

The identifier within the series specified by the "name" attribute.

For BCPs, FYIs, RFCs, and STDs this is the number within the series. For Internet-Drafts, it is the full draft name (ending with the two-digit version number).

[2.39.](#) <street>

Provides a street address.

This element appears as child element of: <postal> ([Section 2.29](#)).

Content model: only text content.

[2.40.](#) <t>

Contains a paragraph of text.

This element appears as child element of: <abstract> ([Section 2.1](#)), <list> ([Section 2.24](#)), <note> ([Section 2.26](#)), and <section> ([Section 2.37](#)).

Content model:

In any order:

- o Text
- o <list> elements ([Section 2.24](#))
- o <figure> elements ([Section 2.18](#))
- o <xref> elements ([Section 2.48](#))
- o <eref> elements ([Section 2.16](#))
- o <iref> elements ([Section 2.22](#))
- o <cref> elements ([Section 2.13](#))
- o <tt> elements ([Section 2.43](#))

- o `` elements ([Section 2.7](#))
- o `<i>` elements ([Section 2.21](#))
- o `<vspace>` elements ([Section 2.46](#))

[2.40.1.](#) 'anchor' attribute

[[element.t.attribute.anchor.missing: attribute description missing]]

[2.40.2.](#) 'hangText' attribute

[[element.t.attribute.hangText.missing: attribute description missing]]

[2.41.](#) `<texttable>`

Contains a table, consisting of an optional preamble, a header line, rows, and an optional postamble.

The number of columns in the table is determined by the number of `<ttcol>` elements. The number of rows in the table is determined by the number of `<c>` elements divided by the number of columns. There is no requirement that the number of `<c>` elements be evenly divisible by the number of columns.

This element appears as child element of: `<section>` ([Section 2.37](#)).

Content model:

In this order:

1. One optional `<preamble>` element ([Section 2.32](#))
2. One or more `<ttcol>` elements ([Section 2.44](#))
3. Optional `<c>` elements ([Section 2.9](#))
4. One optional `<postamble>` element ([Section 2.31](#))

[2.41.1.](#) 'align' attribute

Determines the horizontal alignment of the table.

Allowed values:

- o "left"

- o "center" (default)
- o "right"

[2.41.2.](#) 'anchor' attribute

[[element.texttable.attribute.anchor.missing: attribute description missing]]

[2.41.3.](#) 'style' attribute

[[element.texttable.attribute.style.missing: attribute description missing]]

Allowed values:

- o "all"
- o "none"
- o "headers"
- o "full" (default)

[2.41.4.](#) 'suppress-title' attribute

[[element.texttable.attribute.suppress-title.missing: attribute description missing]]

Allowed values:

- o "true"
- o "false" (default)

[2.41.5.](#) 'title' attribute

[[element.texttable.attribute.title.missing: attribute description missing]]

[2.42.](#) <title>

Represents the document title.

When this element appears in the <front> element of the current document, the title might also appear in page headers or footers. If it's long (~40 characters), the "abbrev" attribute is used to specified an abbreviated variant.

This element appears as child element of: <front> ([Section 2.20](#)).

Content model: only text content.

[2.42.1](#). 'abbrev' attribute

Specifies an abbreviated variant of the document title.

[2.43](#). <tt>

Causes the text to be displayed in a constant-width font.

This element appears as child element of: <annotation> ([Section 2.3](#)), ([Section 2.7](#)), <c> ([Section 2.9](#)), <i> ([Section 2.21](#)), <postamble> ([Section 2.31](#)), <preamble> ([Section 2.32](#)), and <t> ([Section 2.40](#)).

Content model:

In any order:

- o Text
- o <xref> elements ([Section 2.48](#))
- o <eref> elements ([Section 2.16](#))
- o <iref> elements ([Section 2.22](#))
- o <cref> elements ([Section 2.13](#))
- o elements ([Section 2.7](#))
- o <i> elements ([Section 2.21](#))

[2.44](#). <ttcol>

Contains a column heading in a table.

This element appears as child element of: <texttable> ([Section 2.41](#)).

Content model:

In any order:

- o <xref> elements ([Section 2.48](#))
- o <eref> elements ([Section 2.16](#))

- o <iref> elements ([Section 2.22](#))
- o <cref> elements ([Section 2.13](#))
- o Text

[2.44.1.](#) **'align' attribute**

Determines the horizontal alignment within the table column.

Allowed values:

- o "left" (default)
- o "center"
- o "right"

[2.44.2.](#) **'width' attribute**

[[element.ttcol.attribute.width.missing: attribute description missing]]

[2.45.](#) **<uri>**

Contains a web address associated with the author.

The contents should be a valid URI (see [Section 3 of \[RFC3986\]](#)).

This element appears as child element of: <address> ([Section 2.2](#)).

Content model: only text content.

[2.46.](#) **<vspace>**

[[element.vspace.missing: element description missing]]

This element appears as child element of: <t> ([Section 2.40](#)).

Content model: this element does not have any contents.

[2.46.1.](#) **'blankLines' attribute**

[[element.vspace.attribute.blankLines.missing: attribute description missing]]

[2.47.](#) `<workgroup>`

This element is used to specify the Working Group the document originates from, if any. The recommended format is the official name of the Working Group (with some capitalization).

In Internet-Drafts, this is used in the upper left corner of the boilerplate, replacing the "Network Working Group" string. Formatting software can append the words "Working Group" or "Research Group", depending on the "submissionType" property on the `<rfc>` element ([Section 2.36.9](#)).

This element appears as child element of: `<front>` ([Section 2.20](#)).

Content model: only text content.

[2.48.](#) `<xref>`

[[element.xref.missing: element description missing]]

This element appears as child element of: `<annotation>` ([Section 2.3](#)), `` ([Section 2.7](#)), `<c>` ([Section 2.9](#)), `<i>` ([Section 2.21](#)), `<postamble>` ([Section 2.31](#)), `<preamble>` ([Section 2.32](#)), `<t>` ([Section 2.40](#)), `<tt>` ([Section 2.43](#)), and `<ttcol>` ([Section 2.44](#)).

Content model: only text content.

[2.48.1.](#) 'format' attribute

[[element.xref.attribute.format.missing: attribute description missing]]

Allowed values:

- o "counter"
- o "title"
- o "none"
- o "default" (default)

[2.48.2.](#) 'pageno' attribute

Unused.

It's unclear what the purpose of this attribute is; processors seem to ignore it and it never was documented.

Allowed values:

- o "true"
- o "false" (default)

2.48.3. 'target' attribute (mandatory)

[[element.xref.attribute.target.missing: attribute description missing]]

3. Special Unicode Code Points

[[anchor5: Explain those code points where the processors implement something special, such as "nbsp".]]

4. Internationalization Considerations

This format is based on [\[XML\]](#), thus does not have any issues representing arbitrary Unicode [\[UNICODE\]](#) characters in text content.

However, the current canonical RFC format is restricted to US-ASCII [\[USASCII\]](#) characters (see Section 3.1 of [\[RFCSTYLE\]](#)). Future versions are likely to relax this role, and it is expected that the vocabulary will be extended so that US-ASCII alternatives can be provided when that makes sense (for instance, in contact information).

5. Security Considerations

[[anchor6: This section is likely incomplete.]]

The "name" attribute on the <artwork> element ([Section 2.5.4](#)) can be used to derive a filename for saving to a local file system. Trusting this kind of information without pre-processing is a known security risk; see [Section 4.3 of \[RFC6266\]](#) for more information.

Furthermore, all security considerations related to XML processing are relevant as well (see [Section 7 of \[RFC3470\]](#)).

6. IANA Considerations

6.1. Internet Media Type Registration

IANA maintains the registry of Internet media types [\[BCP13\]](#) at <http://www.iana.org/assignments/media-types>.

This document serves as the specification for the Internet media type

"application/rfc+xml". The following is to be registered with IANA.

Type name: application

Subtype name: rfc+xml

Required parameters: There are no required parameters.

Optional parameters: "charset": This parameter has identical semantics as the charset parameter of the "application/xml" media type specified in [\[RFC3023\]](#).

Encoding considerations: Identical to those of "application/xml" as described in [Section 3.2 of \[RFC3023\]](#).

Security considerations: As defined in [Section 5](#). In addition, as this media type uses the "+xml" convention, it inherits the security considerations described in [Section 10 of \[RFC3023\]](#).

Interoperability considerations: N/A

Published specification: This specification.

Applications that use this media type: Applications that either transform xml2rfc to output formats such as plain text or HTML, plus additional analysis tools.

Fragment identifier considerations: The "anchor" attribute is used for assigning document-wide unique identifiers that can be used as shorthand pointers, as described in Section 2.8 of [\[XPOINTER\]](#).

Additional information:

Deprecated alias names for this type: None.

Magic number(s): As specified for "application/xml" in [Section 3.2 of \[RFC3023\]](#).

File extension(s): .xml

Macintosh file type code(s): TEXT

Person & email address to contact for further information: See Authors Section.

Intended usage: COMMON

Restrictions on usage: N/A

Author: See Authors Section.

Change controller: RFC Series Editor (rse@rfc-editor.org)

7. Acknowledgments

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We also thank Marshall T. Rose for both the original design and the reference implementation of the "xml2rfc" formatter.

8. References

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Appendix A. Front Page Generation

A.1. The /rfc/@category Attribute

For RFCs, the category determines the "maturity level" (see [Section 4 of \[RFC2026\]](#)). The allowed values are "std" for "Standards Track", "bcp" for "BCP", "info" for "Informational", "exp" for "Experimental", and "historic" for - surprise - "Historic".

For Internet-Drafts, the category attribute is not needed, but will appear on the front page as "Intended Status". Supplying this information can be useful to reviewers.

A.2. The /rfc/@ipr Attribute

This attribute value can take a long list of values, each of which describes an IPR policy for the document. This attribute's values are not the result of a grand plan, but remain simply for historic reasons. Of these values, only a few are currently in use; all

others are supported by the various tools for backwards compatibility with old source files.

Note: some variations of the boilerplate are selected based on the document's date; therefore it is important to specify the "year", "month" and "day" attributes of the <date> element when archiving the XML source of an Internet-Draft on the day of submission.

Disclaimer: THIS ONLY PROVIDES IMPLEMENTATION INFORMATION. IF YOU NEED LEGAL ADVICE, PLEASE CONTACT A LAWYER. For further information, refer to <<http://trustee.ietf.org/docs/IETF-Copyright-FAQ.pdf>>.

For the current "Status Of This Memo" text, the submissionType attribute determines whether a statement about "Code Components" is inserted (which is the case for the value "IETF", which is the default). Other values, such as "independent", suppress this part of the text.

A.2.1. Current Values: '*trust200902'

The name for these values refers to the "IETF TRUST Legal Provisions Relating to IETF Documents", sometimes simply called the "TLP, that went into effect on February 15, 2009 ([[TLP2.0](#)]). Updates to this document were published on September 12, 2009 ([[TLP3.0](#)]) and on December 28, 2009 ([[TLP4.0](#)]), modifying the license for code components (see <<http://trustee.ietf.org/license-info/>> for further information). The actual text is located in [Section 6](#) ("Text To Be Included in IETF Documents") of these documents.

The tools will automatically produce the "correct" text depending on the document's date information (see above):

```
+-----+-----+
| TLP      | starting with publication date |
+-----+-----+
| [TLP3.0] | 2009-11-01                       |
| [TLP4.0] | 2010-04-01                       |
+-----+-----+
```

A.2.1.1. trust200902

This should be the default, unless one of the more specific '*trust200902' values is a better fit. It produces the text in Sections [6.a](#) and [6.b](#) of the TLP.

A.2.1.2. noModificationTrust200902

This produces additional text from [Section 6.c.i](#) of the TLP:

This document may not be modified, and derivative works of it may not be created, except to format it for publication as an RFC or to translate it into languages other than English.

Note: this clause is incompatible with RFCs that are published on the Standards Track.

A.2.1.3. noDerivativesTrust200902

This produces the additional text from [Section 6.c.ii](#) of the TLP:

This document may not be modified, and derivative works of it may not be created, and it may not be published except as an Internet-Draft.

Note: this clause is incompatible with RFCs.

A.2.1.4. pre5378Trust200902

This produces the additional text from [Section 6.c.iii](#) of the TLP, frequently called the "pre-5378 escape clause":

This document may contain material from IETF Documents or IETF Contributions published or made publicly available before November 10, 2008. The person(s) controlling the copyright in some of this material may not have granted the IETF Trust the right to allow modifications of such material outside the IETF Standards Process. Without obtaining an adequate license from the person(s) controlling the copyright in such materials, this document may not be modified outside the IETF Standards Process, and derivative works of it may not be created outside the IETF Standards Process, except to format it for publication as an RFC or to translate it into languages other than English.

See [Section 4](#) of

<<http://trustee.ietf.org/docs/IETF-Copyright-FAQ.pdf>> for further information about when to use this value.

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[A.2.2.](#) Historic Values

[A.2.2.1.](#) Historic Values: '*trust200811'

The attribute values "trust200811", "noModificationTrust200811" and "noDerivativesTrust200811" are similar to their "trust200902" counterparts, except that they use text specified in <http://trustee.ietf.org/license-info/archive/IETF-Trust-License-Policy_11-10-08.pdf>.

[A.2.2.2.](#) Historic Values: '*3978'

The attribute values "full3978", "noModification3978" and "noDerivatives3978" are similar to their counterparts above, except that they use text specified in [RFC 3978](#) (March 2005).

[A.2.2.3.](#) Historic Values: '*3667'

The attribute values "full3667", "noModification3667" and "noDerivatives3667" are similar to their counterparts above, except that they use text specified in [RFC 3667](#) (February 2004).

[A.2.2.4.](#) Historic Values: '*2026'

The attribute values "full2026" and "noDerivativeWorks2026" are similar to their counterparts above, except that they use text specified in [RFC 2026](#) (October 1996).

The special value "none" was also used back then, and denied the IETF any rights beyond publication as Internet-Draft.

[Appendix B.](#) Relax NG Schema

```
namespace a = "http://relaxng.org/ns/compatibility/annotations/1.0"

rfc =
  element rfc {
    attribute number { text }?,
    [ a:defaultValue = "" ] attribute obsoletes { text }?,
    [ a:defaultValue = "" ] attribute updates { text }?,
    attribute category { "std" | "bcp" | "info" | "exp" | "historic"
  }?,
  attribute consensus { "no" | "yes" }?,
  attribute seriesNo { text }?,
  attribute ipr {
    "full2026"
    | "noDerivativeWorks2026"
```



```

    | "none"
    | "full3667"
    | "noModification3667"
    | "noDerivatives3667"
    | "full3978"
    | "noModification3978"
    | "noDerivatives3978"
    | "trust200811"
    | "noModificationTrust200811"
    | "noDerivativesTrust200811"
    | "trust200902"
    | "noModificationTrust200902"
    | "noDerivativesTrust200902"
    | "pre5378Trust200902"
  }?,
  attribute iprExtract { xsd:IDREF }?,
  [ a:defaultValue = "IETF" ]
  attribute submissionType {
    "IETF" | "IAB" | "IRTF" | "independent"
  }?,
  attribute docName { text }?,
  [ a:defaultValue = "en" ] attribute xml:lang { text }?,
  front,
  middle,
  back?
}
front =
  element front {
    title, author+, date?, area*, workgroup*, keyword*, abstract?,
note*
  }
title =
  element title {
    attribute abbrev { text }?,
    text
  }
author =
  element author {
    attribute initials { text }?,
    attribute surname { text }?,
    attribute fullname { text }?,
    attribute role { "editor" }?,
    [ a:defaultValue = "en" ] attribute xml:lang { text }?,
    organization?,
    address?
  }
organization =
  element organization {

```



```
        attribute abbrev { text }?,
        text
    }
address =
    element address { (postal | phone | facsimile | email | uri)* }
postal =
    element postal {
        (street | city | region | code | country | postalbody)*
    }
street = element street { text }
city = element city { text }
region = element region { text }
code = element code { text }
country = element country { text }
postalbody = element postalbody { text }
phone = element phone { text }
facsimile = element facsimile { text }
email = element email { text }
uri = element uri { text }
date =
    element date {
        attribute day { text }?,
        attribute month { text }?,
        attribute year { text }?,
        empty
    }
area = element area { text }
workgroup = element workgroup { text }
keyword = element keyword { text }
abstract = element abstract { t+ }
note =
    element note {
        attribute title { text },
        t+
    }
middle = element middle { section+ }
section =
    element section {
        attribute anchor { xsd:ID }?,
        attribute title { text },
        [ a:defaultValue = "yes" ] attribute numbered { "yes" | "no" }?,
        [ a:defaultValue = "default" ]
        attribute toc { "include" | "exclude" | "default" }?,
        [ a:defaultValue = "no" ] attribute removeinrfc { "yes" | "no"
    }?,
    (t | figure | texttable | iref)*,
    section*
}
```



```
t =
  element t {
    attribute anchor { xsd:ID }?,
    attribute hangText { text }?,
    (text
     | \list
     | figure
     | xref
     | eref
     | iref
     | cref
     | tt
     | b
     | i
     | vspace)*
  }
\list =
  element list {
    attribute style { text }?,
    attribute hangIndent { text }?,
    attribute counter { text }?,
    t+
  }
xref =
  element xref {
    attribute target { xsd:IDREF },
    [ a:defaultValue = "false" ] attribute pageno { "true" | "false"
  }?,
  [ a:defaultValue = "default" ]
  attribute format { "counter" | "title" | "none" | "default" }?,
  text
}
eref =
  element eref {
    attribute target { text },
    text
  }
iref =
  element iref {
    attribute item { text },
    [ a:defaultValue = "" ] attribute subitem { text }?,
    [ a:defaultValue = "false" ]
    attribute primary { "true" | "false" }?,
    empty
  }
cref =
  element cref {
    attribute anchor { xsd:ID }?,
```



```
    attribute source { text }?,
    text
  }
tt = element tt { (text | xref | eref | iref | cref | b | i)* }
b = element b { (text | xref | eref | iref | cref | tt | i)* }
i = element i { (text | xref | eref | iref | cref | b | tt)* }
vspace =
  element vspace {
    [ a:defaultValue = "0" ] attribute blankLines { text }?,
    empty
  }
figure =
  element figure {
    attribute anchor { xsd:ID }?,
    [ a:defaultValue = "" ] attribute title { text }?,
    [ a:defaultValue = "false" ]
    attribute suppress-title { "true" | "false" }?,
    attribute src { text }?,
    [ a:defaultValue = "left" ]
    attribute align { "left" | "center" | "right" }?,
    [ a:defaultValue = "" ] attribute alt { text }?,
    [ a:defaultValue = "" ] attribute width { text }?,
    [ a:defaultValue = "" ] attribute height { text }?,
    iref*,
    preamble?,
    artwork,
    postamble?
  }
preamble =
  element preamble { (text | xref | eref | iref | cref | tt | b |
i)* }
artwork =
  element artwork {
    [ a:defaultValue = "preserve" ]
    attribute xml:space { "default" | "preserve" }?,
    [ a:defaultValue = "" ] attribute name { text }?,
    [ a:defaultValue = "" ] attribute type { text }?,
    attribute src { text }?,
    [ a:defaultValue = "left" ]
    attribute align { "left" | "center" | "right" }?,
    [ a:defaultValue = "" ] attribute alt { text }?,
    [ a:defaultValue = "" ] attribute width { text }?,
    [ a:defaultValue = "" ] attribute height { text }?,
    [ a:defaultValue = "en" ] attribute xml:lang { text }?,
    text*
  }
postamble =
  element postamble { (text | xref | eref | iref | cref | tt | b |
```



```
i)* }
texttable =
  element texttable {
    attribute anchor { xsd:ID }?,
    [ a:defaultValue = "" ] attribute title { text }?,
    [ a:defaultValue = "false" ]
    attribute suppress-title { "true" | "false" }?,
    [ a:defaultValue = "center" ]
    attribute align { "left" | "center" | "right" }?,
    [ a:defaultValue = "full" ]
    attribute style { "all" | "none" | "headers" | "full" }?,
    preamble?,
    ttcol+,
    c*,
    postamble?
  }
ttcol =
  element ttcol {
    attribute width { text }?,
    [ a:defaultValue = "left" ]
    attribute align { "left" | "center" | "right" }?,
    (xref | eref | iref | cref | text)*
  }
c = element c { (text | xref | eref | iref | cref | tt | b | i)* }
back = element back { references*, section* }
references =
  element references {
    [ a:defaultValue = "References" ] attribute title { text }?,
    reference+
  }
reference =
  element reference {
    attribute anchor { xsd:ID }?,
    attribute target { text }?,
    front,
    seriesInfo*,
    format*,
    annotation*
  }
seriesInfo =
  element seriesInfo {
    attribute name { text },
    attribute value { text },
    empty
  }
format =
  element format {
    attribute target { text }?,
```



```
    attribute type { text },
    attribute octets { text }?,
    empty
  }
annotation =
  element annotation {
    (text | xref | eref | iref | cref | tt | b | i)*
  }
start = rfc
```

Index

A

- abbrev attribute
 - in organization element 22
 - in title element 34
- abstract element 5
 - inside front 17
- address element 5
 - inside author 10
- align attribute
 - in artwork element 7
 - in figure element 15
 - in texttable element 32
 - in ttable element 35
- alt attribute
 - in artwork element 8
 - in figure element 15
- anchor attribute
 - in cref element 13
 - in figure element 15
 - in reference element 25
 - in section element 29
 - in t element 32
 - in texttable element 33
- annotation element 6
 - inside reference 24
- application/rfc+xml Media Type 37
- area element 6
 - inside front 17
- artwork element 7
 - align attribute 7
 - alt attribute 8
 - height attribute 8
 - inside figure 15
 - name attribute 8
 - src attribute 8

type attribute 8
width attribute 8
xml:lang attribute 9
xml:space attribute 9

Attributes

abbrev 22, 34
align 7, 15, 32, 35
alt 8, 15
anchor 13, 15, 25, 29, 32-33
blankLines 35
category 26
consensus 26
counter 19
day 13
docName 27
format 36
fullname 10
hangIndent 19
hangText 32
height 8, 15
initials 10
ipr 27
iprExtract 28
item 18
month 13
name 8, 30
number 28
numbered 29
obsoletes 28
octets 16
pageno 36
primary 18
removeinrfc 30
role 10
seriesNo 28
source 13
src 8, 16
style 20, 33
subitem 19
submissionType 28
suppress-title 16, 33
surname 10
target 14, 16, 25, 37
title 16, 22, 25, 30, 33
toc 30
type 8, 17
updates 28
value 31

- width 8, 16, 35
- xml:lang 9-10, 29
- xml:space 9
- year 14
- author element 9
 - fullname attribute 10
 - initials attribute 10
 - inside front 17
 - role attribute 10
 - surname attribute 10
 - xml:lang attribute 10

B

- b element 10
 - inside annotation 6
 - inside c 12
 - inside i 18
 - inside postamble 23
 - inside preamble 24
 - inside t 32
 - inside tt 34
- back element 11
 - inside rfc 26
- blankLines attribute
 - in vspace element 35

C

- c element 11
 - inside texttable 32
- category attribute
 - in rfc element 26
- city element 12
 - inside postal 23
- code element 12
 - inside postal 23
- consensus attribute
 - in rfc element 26
- counter attribute
 - in list element 19
- country element 12
 - inside postal 23
- cref element 12
 - anchor attribute 13
 - inside annotation 6
 - inside b 11
 - inside c 11
 - inside i 18
 - inside postamble 23

- inside preamble 24
- inside t 31
- inside tt 34
- inside ttcol 35
- source attribute 13

D

- date element 13
 - day attribute 13
 - inside front 17
 - month attribute 13
 - year attribute 14
- day attribute
 - in date element 13
- docName attribute
 - in rfc element 27

E

Elements

- abstract 5, 17
- address 5, 10
- annotation 6, 24
- area 6, 17
- artwork 7, 15
- author 9, 17
- b 6, 10, 12, 18, 23-24, 32, 34
- back 11, 26
- c 11, 32
- city 12, 23
- code 12, 23
- country 12, 23
- cref 6, 11-12, 18, 23-24, 31, 34-35
- date 13, 17
- email 6, 14
- eref 6, 11, 14, 18, 23-24, 31, 34
- facsimile 5, 14
- figure 15, 29, 31
- format 16, 24
- front 17, 24, 26
- i 6, 11-12, 17, 23-24, 32, 34
- iref 6, 11, 15, 18, 23-24, 29, 31, 34-35
- keyword 17, 19
- list 19, 31
- middle 21, 26
- note 17, 21
- organization 10, 22
- phone 5, 22
- postal 5, 22

- postalbody 23
- postamble 15, 23, 32
- preamble 15, 24, 32
- reference 24-25
- references 11, 25
- region 23, 25
- rfc 26
- section 11, 21, 29
- seriesInfo 24, 30
- street 22, 31
- t 5, 19, 21, 29, 31
- texttable 29, 32
- title 17, 33
- tt 6, 11-12, 18, 23-24, 31, 34
- ttcol 32, 34
- uri 6, 35
- vspace 32, 35
- workgroup 17, 36
- xref 6, 11, 18, 23-24, 31, 34, 36
- email element 14
 - inside address 6
- eref element 14
 - inside annotation 6
 - inside b 11
 - inside c 11
 - inside i 18
 - inside postamble 23
 - inside preamble 24
 - inside t 31
 - inside tt 34
 - inside ttcol 34
 - target attribute 14

F

- facsimile element 14
 - inside address 5
- figure element 15
 - align attribute 15
 - alt attribute 15
 - anchor attribute 15
 - height attribute 15
 - inside section 29
 - inside t 31
 - src attribute 16
 - suppress-title attribute 16
 - title attribute 16
 - width attribute 16
- format attribute

- in xref element 36
- format element 16
 - inside reference 24
 - octets attribute 16
 - target attribute 16
 - type attribute 17
- front element 17
 - inside reference 24
 - inside rfc 26
- fullname attribute
 - in author element 10

H

- hangIndent attribute
 - in list element 19
- hangText attribute
 - in t element 32
- height attribute
 - in artwork element 8
 - in figure element 15

I

- i element 17
 - inside annotation 6
 - inside b 11
 - inside c 12
 - inside postamble 23
 - inside preamble 24
 - inside t 32
 - inside tt 34
- initials attribute
 - in author element 10
- ipr attribute
 - '*2026' 44
 - '*3667' 44
 - '*3978' 44
 - '*trust200811' 44
 - '*trust200902' 42
 - 'noDerivativesTrust200902' 43
 - 'noModificationTrust200902' 43
 - 'pre5378Trust200902' 43
 - 'trust200902' 42
 - in rfc element 27
- iprExtract attribute
 - in rfc element 28
- iref element 18
 - inside annotation 6
 - inside b 11

- inside c 11
- inside figure 15
- inside i 18
- inside postamble 23
- inside preamble 24
- inside section 29
- inside t 31
- inside tt 34
- inside ttcol 35
- item attribute 18
- primary attribute 18
- subitem attribute 19
- item attribute
 - in iref element 18

K

- keyword element 19
 - inside front 17

L

- list element 19
 - counter attribute 19
 - hangIndent attribute 19
 - inside t 31
 - style attribute 20
- list styles
 - empty 20
 - format ... [20](#)
 - hanging 20
 - letters 20
 - numbers 20
 - symbols 20

M

- Media Type
 - application/rfc+xml 37
- middle element 21
 - inside rfc 26
- month attribute
 - in date element 13

N

- name attribute
 - in artwork element 8
 - in seriesInfo element 30
- note element 21
 - inside front 17
 - title attribute 22

- number attribute
 - in rfc element 28
- numbered attribute
 - in section element 29

O

- obsoletes attribute
 - in rfc element 28
- octets attribute
 - in format element 16
- organization element 22
 - abbrev attribute 22
 - inside author 10

P

- pageno attribute
 - in xref element 36
- phone element 22
 - inside address 5
- postal element 22
 - inside address 5
- postalbody element 23
 - inside postal 23
- postamble element 23
 - inside figure 15
 - inside texttable 32
- preamble element 24
 - inside figure 15
 - inside texttable 32
- primary attribute
 - in iref element 18

R

- reference element 24
 - anchor attribute 25
 - inside references 25
 - target attribute 25
- references element 25
 - inside back 11
 - title attribute 25
- region element 25
 - inside postal 23
- removeinrfc attribute
 - in section element 30
- rfc element 26
 - category attribute 26
 - consensus attribute 26
 - docName attribute 27

- ipr attribute 27
- iprExtract attribute 28
- number attribute 28
- obsoletes attribute 28
- seriesNo attribute 28
- submissionType attribute 28
- updates attribute 28
- xml:lang attribute 29
- role attribute
 - in author element 10

S

- section element 29
 - anchor attribute 29
 - inside back 11
 - inside middle 21
 - inside section 29
 - numbered attribute 29
 - removeinrfc attribute 30
 - title attribute 30
 - toc attribute 30
- seriesInfo element 30
 - inside reference 24
 - name attribute 30
 - value attribute 31
- seriesNo attribute
 - in rfc element 28
- source attribute
 - in cref element 13
- src attribute
 - in artwork element 8
 - in figure element 16
- street element 31
 - inside postal 22
- style attribute
 - in list element 20
 - in texttable element 33
- subitem attribute
 - in iref element 19
- submissionType attribute
 - in rfc element 28
- suppress-title attribute
 - in figure element 16
 - in texttable element 33
- surname attribute
 - in author element 10

T

- t element 31
 - anchor attribute 32
 - hangText attribute 32
 - inside abstract 5
 - inside list 19
 - inside note 21
 - inside section 29
- target attribute
 - in eref element 14
 - in format element 16
 - in reference element 25
 - in xref element 37
- texttable element 32
 - align attribute 32
 - anchor attribute 33
 - inside section 29
 - style attribute 33
 - suppress-title attribute 33
 - title attribute 33
- title attribute
 - in figure element 16
 - in note element 22
 - in references element 25
 - in section element 30
 - in texttable element 33
- title element 33
 - abbrev attribute 34
 - inside front 17
- toc attribute
 - in section element 30
- tt element 34
 - inside annotation 6
 - inside b 11
 - inside c 12
 - inside i 18
 - inside postamble 23
 - inside preamble 24
 - inside t 31
- ttcol element 34
 - align attribute 35
 - inside texttable 32
 - width attribute 35
- type attribute
 - in artwork element 8
 - in format element 17

U

updates attribute

- in rfc element 28
- uri element 35
 - inside address 6

V

- value attribute
 - in seriesInfo element 31
- vspace element 35
 - blankLines attribute 35
 - inside t 32

W

- width attribute
 - in artwork element 8
 - in figure element 16
 - in ttcol element 35
- workgroup element 36
 - inside front 17

X

- xml:lang attribute
 - in artwork element 9
 - in author element 10
 - in rfc element 29
- xml:space attribute
 - in artwork element 9
- xref element 36
 - format attribute 36
 - inside annotation 6
 - inside b 11
 - inside c 11
 - inside i 18
 - inside postamble 23
 - inside preamble 24
 - inside t 31
 - inside tt 34
 - inside ttcol 34
 - pageno attribute 36
 - target attribute 37

Y

- year attribute
 - in date element 14

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