Abstract

This document defines the ’XML2RFC’ version 2 vocabulary; an XML-based language used for writing Internet-Drafts and RFCs. This vocabulary is used for current processing of XML into RFCs. A future version of this vocabulary will be used as the canonical version of RFCs.

Editorial Note (To be removed by RFC Editor)

Discussion of this draft takes place on the XML2RFC mailing list (xml2rfc@ietf.org), which has its home page at <https://www.ietf.org/mailman/listinfo/xml2rfc>.

Status of This Memo

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1. Introduction

This document describes version 2 (‘v2’) of the ‘XML2RFC’ vocabulary; an XML (Extensible Markup Language) language ([XML]) used for writing RFCs ([RFCSTYLE]) and Internet-Drafts ([IDGUIDE]).

It obsoletes the original version ("v1") [RFC2629], which contained the original language definition, and which was subsequently extended ("v2"). Furthermore, it discusses potential extensions in a future revision ("v3").

Note that not 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. Syntax Notation

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

Each element description also contains the RNC fragment for that specific element in a slightly simplified form (for instance, leaving out defaults). This is included as alternative for readers who prefer formal syntax over prose. [[anchor2: This information is redundant with the prose *and* repeated in the index; I’d like to hear feedback whether it’s more useful than distracting.]]

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

[[anchor3: 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.]]

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 2.19).

Content model:
One or more `<t>` elements (Section 2.38)

2.1.1. Grammar

```xml
abstract =
    element abstract {
        t+
    }
```

2.2. `<address>`

Provides address information for the author.

This element appears as child element of: `<author>` (Section 2.6).

Content model:

1. One optional `<postal>` element (Section 2.27)
2. One optional `<phone>` element (Section 2.26)
3. One optional `<facsimile>` element (Section 2.16)
4. One optional `<email>` element (Section 2.14)
5. One optional `<uri>` element (Section 2.42)

2.2.1. Grammar

```xml
address =
    element address {
        postal?,
        phone?,
        facsimile?,
        email?,
        uri?
    }
```

2.3. `<annotation>`

Provides additional prose augmenting a bibliographical reference.
For instance:

```xml
<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 2.30).

Content model:

In any order:

- Text
- `<xref>` elements (Section 2.45)
- `<eref>` elements (Section 2.15)
- `<iref>` elements (Section 2.20)
- `<cref>` elements (Section 2.12)
- `<spanx>` elements (Section 2.36)

### 2.3.1. Grammar

```xml
annotation =
  element annotation {
    (TEXT
     | xref
     | eref
     | iref
     | cref
     | spanx)*
  }
```

### 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 2.19).

Content model: only text content.
2.4.1. Grammar

area =
  element area {
    CTEXT
  }

2.5. <artwork>

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

<artwork> is the only element in the vocabulary that provides full control of horizontal whitespace and line breaks, and thus is used for a variety of things, such as:

- diagrams ("line art"),
- source code,
- formal languages (such as ABNF or the RNC notation used in this document),
- complex tables, or
- 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 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 2.17).

Content model:

Text

2.5.1. Attributes

2.5.1.1. align

(optional)

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

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

2.5.1.2. **alt**

(optional)

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

2.5.1.3. **height**

(optional)

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.

2.5.1.4. **name**

(optional)

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).

2.5.1.5. **src**

(optional)

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.
2.5.1.6. type

(optional)

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.

2.5.1.7. width

(optional)

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.

2.5.1.8. xml:space

(optional)

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:

- "default"
- "preserve" (default)

2.5.2. Grammar
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 2.19).

Content model:

1. One optional <organization> element (Section 2.25)

2. One optional <address> element (Section 2.2)

2.6.1. Attributes

2.6.1.1. fullname

(optional)

The full name (used in the automatically generated "Author’s Address"
2.6.1.2. initials

(optional)

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.

2.6.1.3. role

(optional)

Specifies the role the author had in creating the document.

Allowed values:

- "editor"

2.6.1.4. surname

(optional)

The author’s surname.

2.6.2. Grammar

author =
  element author {
    attribute initials { ATEXT }?,
    attribute surname { ATEXT }?,
    attribute fullname { ATEXT }?,
    attribute role { "editor" }?,
    organization?,
    address?
  }

2.7. <back>

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

This element appears as child element of: <rfc> (Section 2.33).

Content model:
1. Optional <references> elements (Section 2.31)

2. Optional <section> elements (Section 2.34)

2.7.1. Grammar

   back =
   element back {
      references*,
      section*
   }

2.8. <c>

   Provides the content of a cell in a table.

   This element appears as child element of: <texttable> (Section 2.39).

   Content model:

   In any order:

   o Text

   o <xref> elements (Section 2.45)

   o <eref> elements (Section 2.15)

   o <iref> elements (Section 2.20)

   o <cref> elements (Section 2.12)

   o <spanx> elements (Section 2.36)

2.8.1. Grammar

   c =
   element c {
      TEXT
      | xref
      | eref
      | iref
      | cref
      | spanx)*
   }
2.9. **<city>**

Gives the city name in a postal address.

This element appears as child element of: `<postal>` (*Section 2.27*).

Content model: only text content.

2.9.1. **Grammar**

```plaintext
city =
   element city {
       CTEXT
   }
```

2.10. **<code>**

Gives the postal region code.

This element appears as child element of: `<postal>` (*Section 2.27*).

Content model: only text content.

2.10.1. **Grammar**

```plaintext
code =
   element code {
       CTEXT
   }
```

2.11. **<country>**

Gives the country in a postal address.

This element appears as child element of: `<postal>` (*Section 2.27*).

Content model: only text content.

2.11.1. **Grammar**

```plaintext
country =
   element country {
       CTEXT
   }
```
2.12. <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), <c> (Section 2.8), <postamble> (Section 2.28), <preamble> (Section 2.29), and <t> (Section 2.38).

Content model: only text content.

2.12.1. Attributes

2.12.1.1. anchor

(optional)

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

2.12.1.2. source

(optional)

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

2.12.2. Grammar

cref =
   element cref {
      attribute anchor { xsd:ID }?,
      attribute source { ATEXT }?,
      CTEXT
   }

2.13. <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.

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 2.19).

Content model: this element does not have any contents.

2.13.1. Attributes

2.13.1.1. day

(optional)

Day of publication.

2.13.1.2. month

(optional)

Month of publication.

2.13.1.3. year

(optional)

Year of publication.

2.13.2. Grammar

date =
  element date {
    attribute day { DAY }?,
    attribute month { MONTH }?,
    attribute year { YEAR }?,
    empty
  }

2.14.  <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.

2.14.1.  Grammar

e-mail =
    element email {
      CTEXT
    }

2.15.  <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), <c> (Section 2.8), <postamble> (Section 2.28), <preamble> (Section 2.29), and <t> (Section 2.38).

Content model: only text content.

2.15.1.  Attributes

2.15.1.1.  target

(mandatory)

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

2.15.2.  Grammar
eref =
   element eref {
       attribute target { URI },
       CTEXT
   }

2.16.  <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.

2.16.1.  Grammar

facsimile =
   element facsimile {
       CTEXT
   }

2.17.  <figure>

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

This element appears as child element of: <section> (Section 2.34), and <t> (Section 2.38).

Content model:

1. Optional <iref> elements (Section 2.20)
2. One optional <preamble> element (Section 2.29)
3. One <artwork> element (Section 2.5)
4. One optional <postamble> element (Section 2.28)

2.17.1.  Attributes

2.17.1.1.  align

(optional)
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)

2.17.1.7. title
(optional)

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

2.17.1.8. width
(optional)

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

2.17.2. Grammar

figure =
  element figure {
    attribute anchor { xsd:ID }?,
    attribute title { ATEXT }?,
    attribute suppress-title { "true" | "false" }?,
    attribute src { URI }?,
    attribute align { "left" | "center" | "right" }?,
    attribute alt { ATEXT }?,
    attribute width { ATEXT }?,
    attribute height { ATEXT }?,
    iref*,
    preamble?,
    artwork,
    postamble?
  }

2.18. <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 2.30).

Content model: this element does not have any contents.
2.18.1. Attributes

2.18.1.1. octets

(optional)

Octet length of linked-to document.

2.18.1.2. target

(optional)

URI of document.

[[anchor11: Why is this optional?]]

2.18.1.3. type

(mandatory)

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

2.18.2. Grammar

format =
    element format {
        attribute target { URI }?,
        attribute type { ATEXT },
        attribute octets { NUMBER }?,
        empty
    }

2.19. <front>

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

This element appears as child element of: <reference> (Section 2.30), and <rfc> (Section 2.33).

Content model:

1. One <title> element (Section 2.40)

2. One or more <author> elements (Section 2.6)

3. One <date> element (Section 2.13)
4. Optional <area> elements (Section 2.4)

5. Optional <workgroup> elements (Section 2.44)

6. Optional <keyword> elements (Section 2.21)

7. One optional <abstract> element (Section 2.1)

8. Optional <note> elements (Section 2.24)

2.19.1. Grammar

front =
  element front {
    title,
    author+,
    date,
    area*,
    workgroup*,
    keyword*,
    abstract?,
    note*
  }

2.20. <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), <c> (Section 2.8), <figure> (Section 2.17), <postamble> (Section 2.28), <preamble> (Section 2.29), <section> (Section 2.34), and <t> (Section 2.38).

Content model: this element does not have any contents.
2.20.1. Attributes

2.20.1.1. item

(mandatory)

The item to include.

2.20.1.2. primary

(optional)

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

Allowed values:

- "true"
- "false" (default)

2.20.1.3. subitem

(optional)

The subitem to include.

2.20.2. Grammar

iref =
    element iref {
        attribute item { ATEXT },
        attribute subitem { ATEXT }?,
        attribute primary { "true" | "false" }?,
        empty
    }

2.21. <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 2.19).
Content model: only text content.

2.21.1. Grammar

keyword =
  element keyword {
    CTEXT
  }

2.22. <list>

Delineates a text list.

This element appears as child element of: <t> (Section 2.38).

Content model:

One or more <t> elements (Section 2.38)

2.22.1. Attributes

2.22.1.1. counter

(optional)

[[element.list.attribute.counter.missing: attribute description missing]]

2.22.1.2. hangIndent

(optional)

[[element.list.attribute.hangIndent.missing: attribute description missing]]

2.22.1.3. style

(optional)

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

2.22.2. Grammar
\list =
  element \list {
    attribute style { ATEXT }?,
    attribute hangIndent { NUMBER }?,
    attribute counter { ATEXT }?,
    t+  
  }

2.23.  <middle>

Represents the main content of the document.

This element appears as child element of: <rfc> (Section 2.33).

Content model:

One or more <section> elements (Section 2.34)

2.23.1.  Grammar

middle =
  element middle {
    section+
  }

2.24.  <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 2.19).

Content model:

One or more <t> elements (Section 2.38)

2.24.1.  Attributes

2.24.1.1.  title

  (mandatory)

  The title of the note.
2.24.2. Grammar

note =
   element note {
      attribute title { ATEXT },
      t+
   }

2.25. <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.

2.25.1. Attributes

2.25.1.1. abbrev

(optional)

Abbreviated variant.

2.25.2. Grammar

organization =
   element organization {
      attribute abbrev { ATEXT }?,
      CTEXT
   }

2.26. <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.
2.26.1. Grammar

\[
\text{phone} =
\text{element phone} \{
\text{CTEXT}
\}
\]

2.27. <postal>

Contains child elements providing postal information.

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

Content model:

1. One or more <street> elements (Section 2.37)
2. In any order:
   * <city> elements (Section 2.9)
   * <region> elements (Section 2.32)
   * <code> elements (Section 2.10)
   * <country> elements (Section 2.11)

2.27.1. Grammar

\[
\text{postal} =
\text{element postal} \{
\text{street+},
(city
  | region
  | code
  | country)*
\}
\]

2.28. <postamble>

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

This element appears as child element of: <figure> (Section 2.17), and <texttable> (Section 2.39).

Content model:

In any order:
2.28.1. Grammar

postamble =
  element postamble {
    (TEXT
     | xref
     | eref
     | iref
     | cref
     | spanx)*
  }

2.29. <preamble>

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

This element appears as child element of: <figure> (Section 2.17),
and <texttable> (Section 2.39).

Content model:

In any order:

  o Text
  o <xref> elements (Section 2.45)
  o <eref> elements (Section 2.15)
  o <iref> elements (Section 2.20)
  o <cref> elements (Section 2.12)
  o <spanx> elements (Section 2.36)
2.29.1. Grammar

preamble =
    element preamble {
        (TEXT
        | xref
        | eref
        | iref
        | cref
        | spanx)*
    }

2.30. <reference>

Represents a bibliographical reference.

This element appears as child element of: <references> (Section 2.31).

Content model:

1. One <front> element (Section 2.19)
2. Optional <seriesInfo> elements (Section 2.35)
3. Optional <format> elements (Section 2.18)
4. Optional <annotation> elements (Section 2.3)

2.30.1. Attributes

2.30.1.1. anchor

(optional)

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

2.30.1.2. target

(optional)

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).
2.30.2. Grammar

```
reference =
  element reference {
    attribute anchor { xsd:ID }?,
    attribute target { URI }?,
    front,
    seriesInfo*,
    format*,
    annotation*  
  }
```

2.31. <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 2.7).

Content model:

One or more <reference> elements (Section 2.30)

2.31.1. Attributes

2.31.1.1. title

(optional)

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

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

2.31.2. Grammar

```
references =
  element references {
    attribute title { ATEXT }?,
    reference+
  }
```
2.32. <region>

Provides the region name in a postal address.

This element appears as child element of: <postal> (Section 2.27).

Content model: only text content.

2.32.1. Grammar

region =
  element region {
    CTEXT
  }

2.33. <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:

1. One <front> element (Section 2.19)
2. One <middle> element (Section 2.23)
3. One optional <back> element (Section 2.7)

2.33.1. Attributes

2.33.1.1. category

(optional)

Document category (see Appendix A.1).

Allowed values:

- "std"
- "bcp"
2.33.1.2. consensus

(optional)

Affects the generated boilerplate.

See [RFC5741] for more information.

Allowed values:

- "no"
- "yes"

2.33.1.3. docName

(optional)

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.

2.33.1.4. ipr

(optional)

Represents the Intellectual Property status of the document. See Appendix A.2 for details.

Allowed values:

- "full2026"
2.33.1.5.  iprExtract

  (optional)

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

2.33.1.6.  number

  (optional)

  The number of the RFC to be produced.

2.33.1.7.  obsoletes

  (optional)
A comma-separated list of RFC _numbers_ or Internet-Draft names.

2.33.1.8. seriesNo

(optional)

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

2.33.1.9. submissionType

(optional)

The document stream.

See Section 2 of [RFC5741] for details.

Allowed values:

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

2.33.1.10. updates

(optional)

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

2.33.1.11. xml:lang

(optional)

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

See Section 2.12 of [XML] for more information.

2.33.2. Grammar
2.34. <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 2.7), <middle> (Section 2.23), and <section> (Section 2.34).

Content model:
1. In any order:
   * <t> elements (Section 2.38)
   * <figure> elements (Section 2.17)
   * <texttable> elements (Section 2.39)
   * <iref> elements (Section 2.20)

2. Optional <section> elements (Section 2.34)

2.34.1. Attributes

2.34.1.1. anchor

(optional)

2.34.1.2. title

(mandatory)

The title of the section.

2.34.1.3. toc

(optional)

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

2.34.2. Grammar
section =
  element section {
    attribute anchor { xsd:ID }?,
    attribute title { ATEXT },
    attribute toc ( "include" | "exclude" | "default" )?,
    {t |
      figure |
      texttable |
      iref)*,
    section*
  }

2.35.  <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 2.30).

  Content model: this element does not have any contents.

2.35.1.  Attributes

2.35.1.1.  name

  (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".

2.35.1.2.  value

  (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).

2.35.2.  Grammar
seriesInfo =
   element seriesInfo {
      attribute name { ATEXT },
      attribute value { ATEXT },
      empty
   }

2.36.  <spanx>

[[element.spanx.missing: element description missing]]

This element appears as child element of: <annotation> (Section 2.3),
<c> (Section 2.8), <postamble> (Section 2.28), <preamble>
(Section 2.29), and <t> (Section 2.38).

Content model: only text content.

2.36.1.  Attributes

2.36.1.1.  style

(optional)

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

2.36.1.2.  xml:space

(optional)

Determines whitespace handling.

The default value is "preserve", but that value isn’t really suitable
for the use cases <spanx> is defined for (so this might change in
future versions).

See also Section 2.10 of [XML].

Allowed values:

o "default"

o "preserve" (default)
2.36.2. Grammar

```
spanx =
element spanx {
    attribute xml:space ( "default" | "preserve" )?,
    attribute style { ATEXT }?,
    CTEXT
}
```

2.37. <street>

Provides a street address.

This element appears as child element of: <postal> (Section 2.27).

Content model: only text content.

2.37.1. Grammar

```
street =
element street {
    CTEXT
}
```

2.38. <t>

Contains a paragraph of text.

This element appears as child element of: <abstract> (Section 2.1), <list> (Section 2.22), <note> (Section 2.24), and <section> (Section 2.34).

Content model:

In any order:

- Text
- <list> elements (Section 2.22)
- <figure> elements (Section 2.17)
- <xref> elements (Section 2.45)
- <eref> elements (Section 2.15)
- <iref> elements (Section 2.20)
o  <cref> elements (Section 2.12)

o  <spanx> elements (Section 2.36)

o  <vspace> elements (Section 2.43)

2.38.1. Attributes

2.38.1.1. anchor

(optional)

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

2.38.1.2. hangText

(optional)

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

2.38.2. Grammar

t =

  element t {
    attribute anchor { xsd:ID }?,
    attribute hangText { ATEXT }?,
    (TEXT
      | \list
      | figure
      | xref
      | eref
      | iref
      | cref
      | spanx
      | vspace)*
  }

2.39. <texttable>

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

This element appears as child element of: <section> (Section 2.34).

Content model:
1. One optional <preamble> element (Section 2.29)
2. One or more <ttcol> elements (Section 2.41)
3. Optional <c> elements (Section 2.8)
4. One optional <postamble> element (Section 2.28)

2.39.1. Attributes

2.39.1.1. align

(optional)
Determines the horizontal alignment of the table.

Allowed values:

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

2.39.1.2. anchor

(optional)

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

2.39.1.3. style

(optional)

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

Allowed values:

- "all"
- "none"
- "headers"
- "full" (default)
2.39.1.4. suppress-title

(optional)

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

Allowed values:

- "true"
- "false" (default)

2.39.1.5. title

(optional)

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

2.39.2. Grammar

texttable =
  element texttable {
    attribute anchor { xsd:ID }?,
    attribute title { ATEXT }?,
    attribute suppress-title { "true" | "false" }?,
    attribute align ( "left" | "center" | "right" )?,
    attribute style ( "all" | "none" | "headers" | "full" )?,
    preamble?,
    ttcol+,
    c*,
    postamble?
  }

2.40. <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 2.19).

Content model: only text content.
2.40.1. Attributes

2.40.1.1. abbrev

   (optional)

   Specifies an abbreviated variant of the document title.

2.40.2. Grammar

   title =
     element title {
       attribute abbrev { ATEXT }?,
       CTEXT
     }

2.41. <ttcol>

   Contains a column heading in a table.

   This element appears as child element of: <texttable> (Section 2.39).

   Content model: only text content.

2.41.1. Attributes

2.41.1.1. align

   (optional)

   Determines the horizontal alignment within the table column.

   Allowed values:

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

2.41.1.2. width

   (optional)

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

ttcol =
   element ttcol {
      attribute width { ATEXT }?,
      attribute align ( "left" | "center" | "right" )?,
      CTEXT
   }

2.42. <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.

2.42.1. Grammar

uri =
   element uri {
      CTEXT
   }

2.43. <vspace>

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

This element appears as child element of: <t> (Section 2.38).

Content model: this element does not have any contents.

2.43.1. Attributes

2.43.1.1. blankLines

(optional)

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

2.43.2. Grammar
vspace =
  element vspace {
    attribute blankLines { NUMBER }?,
    empty
  }

2.44. <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), plus the string "Working Group".

In Internet-Drafts, this is used in the upper left corner of the boilerplate, replacing the "Network Working Group" string.

This element appears as child element of: <front> (Section 2.19).

Content model: only text content.

2.44.1. Grammar

workgroup =
  element workgroup {
    CTEXT
  }

2.45. <xref>

This element appears as child element of: <annotation> (Section 2.3), <c> (Section 2.8), <postamble> (Section 2.28), <preamble> (Section 2.29), and <t> (Section 2.38).

Content model: only text content.

2.45.1. Attributes

2.45.1.1. format

(optional)

Allowed values:
2.45.1.2. pageno

(optional)

Unused.

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

Allowed values:

- "true"
- "false" (default)

2.45.1.3. target

(mandatory)

3. Special Unicode Code Points

[[anchor29: Explain those code points where the processors implement something special, such as "nbsp".]]
4. Internationalization Considerations

5. Security Considerations

6. IANA Considerations

7. Acknowledgments

Thanks to everybody who reviewed this document and provided feedback and/or specification text, in particular Brian Carpenter and Paul Hoffman.

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

8. References

8.1. Normative References

8.2. Informative References


Latest version available at <http://www.w3.org/TR/xml>.


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):

+----------+--------------------------------+
<table>
<thead>
<tr>
<th>TLP</th>
<th>starting with publication date</th>
</tr>
</thead>
<tbody>
<tr>
<td>[TLP3.0]</td>
<td>2009-11-01</td>
</tr>
<tr>
<td>[TLP4.0]</td>
<td>2010-04-01</td>
</tr>
</tbody>
</table>
+----------+--------------------------------+

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 that are published on the Standards Track.

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.

Note: this text appears under "Copyright Notice", unless the document was published before November 2009, in which case it appears under "Status Of This Memo".

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. Changes from RFC 2629 ('v1')

B.1. Removed Elements

The <appendix> element has been removed; to generate an appendix, place a <section> inside <back>.

B.2. Changed Defaults

Many attributes have lost their "default" value; this is to avoid having document semantics differ based on whether a DTD was specified and evaluated. Processors will handle absent values the way the default value was specified before.

B.3. Changed Elements

<artwork>: Has a set of new attributes: "name", "type", "src", "align", "alt", "width", and "height". (Section 2.5)

<author>: The <organization> element is now optional. The "role" attribute was added. (Section 2.6)

<date>: All attributes are now optional. (Section 2.13)

<figure>: Has a set of new attributes: "suppress-title", "src", "align", "alt", "width", and "height". (Section 2.17)

<iref>: Has a new "primary" attribute. (Section 2.20)

<list>: The "style" attribute isn't restricted to a set of enumerated values anymore. The "hangIndent" and "counter" attributes have been added. (Section 2.22)

<rfc>: The "ipr" attribute has gained additional values. The attributes "consensus", "iprExtract", "submissionType", and "xml:lang" have been added. (Section 2.33)

<reference>: <annotation> allows adding prose to a reference. (Section 2.30)

<references>: Can now appear multiple times, and carry a "title" attribute (so that normative and informative references can be split). (Section 2.31)

<section>: The new "toc" attribute controls whether it will appear in the Table Of Contents. <iref> can now appear as direct child element. (Section 2.34)
<t>: The "anchor" attribute can now be used as well, however there are restrictions on how they can be referred to. (Section 2.38)

B.4. New Elements

The following elements have been added: <annotation> (Section 2.3), <c> (Section 2.8), <cref> (Section 2.12), <format> (Section 2.18), <spanx> (Section 2.36), <texttable> (Section 2.39).

Appendix C. Relax NG Schema

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

NUMBER = string
NUMBERS = string
DAY = string
MONTH = string
YEAR = string
URI = string
ATEXT = string
CTEXT = text
TEXT = text

element rfc {
    attribute rfc number { NUMBER }?,
    [ a:defaultValue = "" ] attribute obsoletes { NUMBERS }?,
    [ a:defaultValue = "" ] attribute updates { NUMBERS }?,
    attribute category { "std" | "bcp" | "info" | "exp" | "historic" }?,
    attribute consensus { "no" | "yes" }?,
    attribute seriesNo { NUMBER }?,
    attribute ipr {
        "full2026"
        | "noDerivativeWorks2026"
        | "none"
        | "full3667"
        | "noModification3667"
        | "noDerivatives3667"
        | "full3978"
        | "noModification3978"
        | "noDerivatives3978"
        | "trust200811"
        | "noModificationTrust200811"
        | "noDerivativesTrust200811"
        | "trust200902"
        | "noModificationTrust200902"
        | "noDerivativesTrust200902"
attribute iprExtract { xsd:IDREF }?,
[ a:defaultValue = "IETF" ]
attribute submissionType {
  "IETF" | "IAB" | "IRTF" | "independent"
}?,
attribute docName { ATEXT }?,
[ a:defaultValue = "en" ] attribute xml:lang { ATEXT }?,
  front,
  middle,
  back?
} front =
  element front {
    title, author+, date, area*, workgroup*, keyword*, abstract?,
    note*
  } title =
  element title {
    attribute abbrev { ATEXT }?,
    CTEXT
  } author =
  element author {
    attribute initials { ATEXT }?,
    attribute surname { ATEXT }?,
    attribute fullname { ATEXT }?,
    attribute role { "editor" }?,
    organization?,
    address?
  } organization =
  element organization {
    attribute abbrev { ATEXT }?,
    CTEXT
  } address = element address { postal?, phone?, facsimile?, email?,
    uri? }
  postal = element postal { street+, (city | region | code | country)* }
  street = element street { CTEXT }
  city = element city { CTEXT }
  region = element region { CTEXT }
  code = element code { CTEXT }
  country = element country { CTEXT }
  phone = element phone { CTEXT }
  facsimile = element facsimile { CTEXT }
  phone = element phone { CTEXT }
  facsimile = element facsimile { CTEXT }
  

email = element email { CTEXT }
uri = element uri { CTEXT }
date =
  element date {
    attribute day { DAY }?,
    attribute month { MONTH }?,
    attribute year { YEAR }?,
    empty
  }
area = element area { CTEXT }
workgroup = element workgroup { CTEXT }
keyword = element keyword { CTEXT }
abstract = element abstract { t+ }
note =
  element note {
    attribute title { ATEXT },
    t+
  }
middle = element middle { section+ }
section =
  element section {
    attribute anchor { xsd:ID }?,
    attribute title { ATEXT },
    [ a:defaultValue = "default" ]
    attribute toc { "include" | "exclude" | "default" }?,
    (t | figure | texttable | iref)*,
    section*
  }
t =
  element t {
    attribute anchor { xsd:ID }?,
    attribute hangText { ATEXT }?,
    (TEXT
      \list
      figure
      xref
      eref
      iref
      cref
      spanx
      vspace)*
    )

\list =
  element list {
    attribute style { ATEXT }?,
    attribute hangIndent { NUMBER }?,
    attribute counter { ATEXT }?,
    t+}
xref =
    element xref {
        attribute target { xsd:IDREF },
        [ a:defaultValue = "false" ] attribute pageno { "true" | "false" }?,
        [ a:defaultValue = "default" ]
        attribute format { "counter" | "title" | "none" | "default" }?,
        CTEXT
    }
eref =
    element eref {
        attribute target { URI },
        CTEXT
    }
iref =
    element iref {
        attribute item { ATEXT },
        [ a:defaultValue = "" ] attribute subitem { ATEXT }?,
        [ a:defaultValue = "false" ]
        attribute primary { "true" | "false" }?,
        empty
    }
cref =
    element cref {
        attribute anchor { xsd:ID }?,
        attribute source { ATEXT }?,
        CTEXT
    }
spanx =
    element spanx {
        [ a:defaultValue = "preserve" ]
        attribute xml:space { "default" | "preserve" }?,
        [ a:defaultValue = "emph" ] attribute style { ATEXT }?,
        CTEXT
    }
vspace =
    element vspace {
        [ a:defaultValue = "0" ] attribute blankLines { NUMBER }?,
        empty
    }
figure =
    element figure {
        attribute anchor { xsd:ID }?,
        [ a:defaultValue = "" ] attribute title { ATEXT }?,
        [ a:defaultValue = "false" ]
        attribute suppress-title { "true" | "false" }?,
        attribute src { URI }?,
        CTEXT
    }
attribute align { "left" | "center" | "right" }?,
[ a:defaultValue = "" ] attribute alt { ATEXT }?,
[ a:defaultValue = "" ] attribute width { ATEXT }?,
[ a:defaultValue = "" ] attribute height { ATEXT }?,
iref*,
preamble?,
artwork,
postamble?
}
preamble =
  element preamble { (TEXT | xref | eref | iref | cref | spanx)* }
artwork =
  element artwork {
    attribute xml:space { "default" | "preserve" }?,
    [ a:defaultValue = "" ] attribute name { ATEXT }?,
    attribute src { URI }?,
    [ a:defaultValue = "left" ]
    attribute align { "left" | "center" | "right" }?,
    [ a:defaultValue = "" ] attribute alt { ATEXT }?,
    [ a:defaultValue = "" ] attribute width { ATEXT }?,
    [ a:defaultValue = "" ] attribute height { ATEXT }?,
    TEXT*
  }
postamble =
  element postamble { (TEXT | xref | eref | iref | cref | spanx)* }
texttable =
  element texttable {
    attribute anchor { xsd:ID }?,
    [ a:defaultValue = "" ] attribute title { ATEXT }?,
    [ 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 { ATEXT }?,
    [ a:defaultValue = "left" ]
    attribute align { "left" | "center" | "right" }?,

Apppendix D. Proposed Future Changes for 'v3'

[anchor40: The list below is just a starting point, see <https://www.rfc-editor.org/rse/wiki/doku.php?id=design:xml-tags> for more.]

D.1. Contact Information

If contact information is changed to allow non-ASCII characters: add a place for a ASCII fallback (probably just for the author names).

The content model for <postal> ought to be more strict to allow at
most one of <city>, <region>, <code>, and <country>.

It should be possible to have multiple <uri> elements.

<facsimile> looks outdated, while a container for IM (messaging) URIs is missing. Maybe this area needs to be aligned with vCard.

Section 4.8 of [RFCSTYLE] hints at a "Contributors" Section that could supply contact information similar to the one in the auto-generated "Authors’ Address" Section. Consider how to capture contributor contact information (probably not using <author> to avoid confusion). Furthermore, consider ways to augment the contact information section with prose.

D.2. Figures

Cleanup the set of overlapping attributes between <figure> and <artwork>.

For artwork that consists of a sequence of items (such as messages in a protocol example), it would be good if a <figure> element could contain multiple <artwork> elements (to assist code to find good places for page breaks).

Extend <figure> to support different types of artwork (such as by specifying certain type attribute values, see <http://greenbytes.de/tech/webdav/rfc2629xslt/rfc2629xslt.html#artwork.types>), and also avoid having to markup code (such as ABNF) as "artwork".

It would be good if "code components" could be marked as such.

Finally, even in preformatted text use of markup could be useful to support (a) references, or (b) highlighting the important bits (<http://greenbytes.de/tech/webdav/rfc2629xslt/rfc2629xslt.html#ext-rfc2629.artwork>).

D.3. Linking

Extend <xref> so that subsection/anchors can be specified (see <http://greenbytes.de/tech/webdav/rfc2629xslt/rfc2629xslt.html#ext-rfc2629.xref>). Remove the "pageno" attribute which seems to be both undocumented and non-functional.

D.4. Lists

Allow multiple paragraphs in list items; eliminating the need to use <vspace> (see <http://greenbytes.de/tech/webdav/rfc2629xslt/rfc2629xslt.html#ext-element.lt>).
D.5. References

Allow overriding the "anchor" attribute of an included <reference> element.

Add a way to add prose to a reference that avoids abuse of <seriesInfo>.

Allow <reference>s that identify a document set such as a BCP.

Deprecate or remove the <format> element; right now it’s not used for the generation of the plain text document anyway.

It is unclear why the "anchor" attribute is optional.

D.6. Archival Considerations

When this vocabulary becomes the canonical RFC format, it will need to be able to capture all generated information, such as section/figure/table numbers, plus any auto-generated boilerplate (copyright statements etc.).

D.7. Document Metadata

Extend the concept of language tagging to at least examples and contact information to address potential japanese/chinese font confusion.

Provide a way to indicate the intended level on the standards track.

Include feedback information in a way so that generated documents can provide usable feedback links (see <http://greenbytes.de/tech/webdav/rfc2629xslt/rfc2629xslt.html#ext.element.feedback>).


Make the <date> element optional; all of its content is optional already.

<spanx> has both a weird whitespace model ("preserve") and problematic styling. Consider to deprecate it in favor of elements such as <em> and <code> (where the name "code" is already in use for region codes).

Indented paragraphs currently can be created by abusing the <list>. It would be good to have a special element for this purpose.

Provide a special element for generating citations.
The content model for `<cref>` should be extended to allow more flow elements, such as `<xref>` and `<eref>`.

Appendix E. Comparison of Vocabularies (to be removed before publication as RFC)

With comments being stripped; using "diff -C100" to add change marks.

E.1. RFC 2629 ('v1') RelaxNG Grammar

(from Appendix B of [RFC2629], converted using "trang" into Relax NG Compact Notation [RNC])

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

NUMBER = string
NUMBERS = string
DAY = string
MONTH = string
YEAR = string
URI = string
ATEXT = string
CTEXT = text
TEXT = text
rfc =
  element rfc {
    attribute number { NUMBER }?,
    [ a:defaultValue = "" ] attribute obsoletes { NUMBERS }?,
    [ a:defaultValue = "" ] attribute updates { NUMBERS }?,
    attribute category { "std" | "bcp" | "info" | "exp" | "historic" }?,
    attribute seriesNo { NUMBER }?,
    attribute ipr { "full2026" | "noDerivativeWorks2026" | "none" }?,
    attribute docName { ATEXT }?,
    front, middle, back?
  }
front =
  element front {
    title, author+, date, area*, workgroup*, keyword*, abstract?, note*
  }
title =
  element title {
    attribute abbrev { ATEXT }?,
    CTEXT
  }
author =
element author {
    attribute initials { ATEXT }?,
    attribute surname { ATEXT }?,
    attribute fullname { ATEXT }?,
    !    organization,
    address?
}
organization =
    element organization {
        attribute abbrev { ATEXT }?,
        CTEXT
    }
address = element address { postal?, phone?, facsimile?, email?, uri? }
postal = element postal { street+, (city | region | code | country)* }
street = element street { CTEXT }
city = element city { CTEXT }
region = element region { CTEXT }
code = element code { CTEXT }
country = element country { CTEXT }
phone = element phone { CTEXT }
facsimile = element facsimile { CTEXT }
email = element email { CTEXT }
uri = element uri { CTEXT }
date =
    element date {
        attribute day { DAY }?,
        !    attribute month { MONTH },
        !    attribute year { YEAR },
        empty
    }
area = element area { CTEXT }
workgroup = element workgroup { CTEXT }
keyword = element keyword { CTEXT }
abstract = element abstract { t+ }
note =
    element note {
        attribute title { ATEXT },
        t+
    }
middle = element middle { section+ }
section =
    element section {
        attribute anchor { xsd:ID }?,
        attribute title { ATEXT },
        !    (t | figure | section)*
    }
t =
    element t {
attribute hangText { ATEXT }?,
  ! (TEXT | \list | figure | xref | eref | iref | vspace)*
}
\list =
element list {
  ! [ a:defaultValue = "empty" ]
  ! attribute style { "numbers" | "symbols" | "hanging" | "empty" }?,
t+
} xref =
element xref {
  attribute target { xsd:IDREF },
  [ a:defaultValue = "false" ] attribute pageno { "true" | "false" }?,
  CTEXT
}
eref =
element eref {
  attribute target { URI },
  CTEXT
}
iref =
element iref {
  attribute item { ATEXT },
  [ a:defaultValue = "" ] attribute subitem { ATEXT }?,
  empty
}
vspace =
element vspace {
  [ a:defaultValue = "0" ] attribute blankLines { NUMBER }?,
  empty
}
figure =
element figure {
  attribute anchor { xsd:ID }?,
  [ a:defaultValue = "" ] attribute title { ATEXT }?,
  preamble?,
  artwork,
  postamble?
}
! preamble = element preamble { (TEXT | xref | eref | iref)* }
artwork =
element artwork {
  [ a:defaultValue = "preserve" ]
  attribute xml:space { "default" | "preserve" }?,
  TEXT*
}
! postamble = element postamble { (TEXT | xref | eref | iref)* }
! back = element back { references?, section* }
E.2. Current ('v2') RelaxNG Grammar

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

NUMBER = string
NUMBERS = string
DAY = string
MONTH = string
YEAR = string
URI = string
ATEXT = string
CTEXT = text
TEXT = text
rfc =
element rfc {
  attribute number { NUMBER }?,
  [ a:defaultValue = "" ] attribute obsoletes { NUMBERS }?,
  [ a:defaultValue = "" ] attribute updates { NUMBERS }?,
  attribute category { "std" | "bcp" | "info" | "exp" | "historic" }?,
  + attribute consensus { "no" | "yes" }?,
  attribute seriesNo { NUMBER }?,
  ! attribute ipr {
    !   "full2026"
    !   "noDerivativeWorks2026"
    !   "none"
    !   "full3667"
    !   "noModification3667"
    !   "noDerivatives3667"
    !   "full3978"
    !   "noModification3978"
    !   "noDerivatives3978"
    !   "trust200811"
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!       | "noModificationTrust200811"
!       | "noDerivativesTrust200811"
!       | "trust200902"
!       | "noModificationTrust200902"
!       | "noDerivativesTrust200902"
!       | "pre5378Trust200902"
! )?,
!     attribute iprExtract { xsd:IDREF }?,
!     [ a:defaultValue = "IETF" ]
!     attribute submissionType {
!         "IETF" | "IAB" | "IRTF" | "independent"
!     }?,
     attribute docName { ATEXT }?,
+     [ a:defaultValue = "en" ] attribute xml:lang { ATEXT }?,
     front,
     middle,
     back?
}
front =
element front {
    title, author+, date, area*, workgroup*, keyword*, abstract?, note*
}
title =
element title {
    attribute abbrev { ATEXT }?,
    CTEXT
}
author =
element author {
    attribute initials { ATEXT }?,
    attribute surname { ATEXT }?,
    attribute fullname { ATEXT }?,
+    attribute role { "editor" }?,
+    organization?,
    address?
}
organization =
element organization {
    attribute abbrev { ATEXT }?,
    CTEXT
}
address = element address { postal?, phone?, facsimile?, email?, uri? }
postal = element postal { street+, (city | region | code | country)* }
street = element street { CTEXT }
city = element city { CTEXT }
region = element region { CTEXT }
code = element code { CTEXT }
country = element country { CTEXT }

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phone = element phone { CTEXT }
facsimile = element facsimile { CTEXT }
email = element email { CTEXT }
uri = element uri { CTEXT }
date =
    element date {
        attribute day { DAY }?,
        attribute month { MONTH }?,
        attribute year { YEAR }?,
        empty
    }
area = element area { CTEXT }
workgroup = element workgroup { CTEXT }
keyword = element keyword { CTEXT }
abstract = element abstract { t+ }
note =
    element note {
        attribute title { ATEXT },
        t+
    }
middle = element middle { section+ }
section =
    element section {
        attribute anchor { xsd:ID }?,
        attribute title { ATEXT },
        [ a:defaultValue = "default" ]
        attribute toc { "include" | "exclude" | "default" }?,
        (t | figure | texttable | iref)*,
        section*
    }
t =
    element t {
        attribute anchor { xsd:ID }?,
        attribute hangText { ATEXT }?,
        (TEXT
        | \list
        | figure
        | xref
        | eref
        | iref
        | cref
        | spanx
        | vspace)*
    }
\list =
    element list {
        attribute style { ATEXT }?,
        attribute hangIndent { NUMBER }?,
        \...
    }
Internet-Draft                   XML2RFC                   November 2013

!     attribute counter { ATEXT }?,
  t+
}
xref =
  element xref {
    attribute target { xsd:IDREF },
    [ a:defaultValue = "false" ] attribute pageno { "true" | "false" }?,
    + [ a:defaultValue = "default" ]
    + attribute format { "counter" | "title" | "none" | "default" }?,
    CTEXT
  }
eref =
  element eref {
    attribute target { URI },
    CTEXT
  }
iref =
  element iref {
    attribute item { ATEXT },
    [ a:defaultValue = "" ] attribute subitem { ATEXT }?,
    + [ a:defaultValue = "false" ]
    + attribute primary { "true" | "false" }?,
    empty
  }
  + cref =
    + element cref {
      + attribute anchor { xsd:ID }?,
      + attribute source { ATEXT }?,
      + CTEXT
    } +
  + spanx =
    + element spanx {
      + [ a:defaultValue = "preserve" ]
      + attribute xml:space { "default" | "preserve" }?,
      + [ a:defaultValue = "emph" ] attribute style { ATEXT }?,
      + CTEXT
    } +
  vspace =
    element vspace {
      [ a:defaultValue = "0" ] attribute blankLines { NUMBER }?,
      empty
    }
figure =
  element figure {
    attribute anchor { xsd:ID }?,
    [ a:defaultValue = "" ] attribute title { ATEXT }?,
    + [ a:defaultValue = "false" ]
    + attribute suppress-title { "true" | "false" }?,
  }

Reschke                   Expires May 30, 2014                 [Page 66]
attribute src { URI }?,
+ [ a:defaultValue = "left" ]
+ attribute align { "left" | "center" | "right" }?,
+ [ a:defaultValue = "" ] attribute alt { ATEXT }?,
+ [ a:defaultValue = "" ] attribute width { ATEXT }?,
+ [ a:defaultValue = "" ] attribute height { ATEXT }?,
+ iref*,
preamble?,
artwork,
postamble?
)
! preamble =
!   element preamble { (TEXT | xref | eref | iref | cref | spanx)* } }
! artwork =
!   element artwork {
[ a:defaultValue = "preserve" ]
    attribute xml:space { "default" | "preserve" }?,
+ [ a:defaultValue = "" ] attribute name { ATEXT }?,
+ [ a:defaultValue = "" ] attribute type { ATEXT }?,
+ attribute src { URI }?,
+ [ a:defaultValue = "left" ]
+ attribute align { "left" | "center" | "right" }?,
+ [ a:defaultValue = "" ] attribute alt { ATEXT }?,
+ [ a:defaultValue = "" ] attribute width { ATEXT }?,
+ [ a:defaultValue = "" ] attribute height { ATEXT }?,
    TEXT*
}
! postamble =
!   element postamble { (TEXT | xref | eref | iref | cref | spanx)* } }
texttable =
!   element texttable {
!     attribute anchor { xsd:ID }?,
!     [ a:defaultValue = "" ] attribute title { ATEXT }?,
!     [ 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 { ATEXT }?,
!     [ a:defaultValue = "left" ]
attribute align { "left" | "center" | "right" }?,
! CTEXT
!
! c = element c { (TEXT | xref | eref | iref | cref | spanx)* }!
!
! back = element back { references*, section* }!

! references =
!   element references {
!     [ a:defaultValue = "References" ] attribute title { ATEXT }?,
!     reference+
!   }

reference =
  element reference {
    attribute anchor { xsd:ID }?,
    attribute target { URI }?,
    front,
    ! seriesInfo*,
    ! format*,
    ! annotation*
  }

seriesInfo =
  element seriesInfo {
    attribute name { ATEXT },
    attribute value { ATEXT },
    empty
  }

+ format =
  + element format {
    + attribute target { URI }?,
    + attribute type { ATEXT },
    + attribute octets { NUMBER }?,
    + empty
  }

+ annotation =
  + element annotation { (TEXT | xref | eref | iref | cref | spanx)* }

start = rfc

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    ‘*3978’ 50
    ‘*trust200811’ 50
    ‘*trust200902’ 48
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