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XHTML™ 1.2

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Abstract

This specification builds upon XHTML 1.1 and XHTML Basic 1.1, helping to create an environment that is a superset of XHTML Basic 1.1. It also reintroduces widely requested features that were not included in XHTML 1.1. Finally, it incorporates new technologies to improve accessibility and integration with the semantic web.

Status of this document

This section describes the status of this document at the time of its publication. Other documents may supersede this document. A list of current W3C publications and the latest revision of this technical report can be found in the W3C technical reports index at http://www.w3.org/TR/.

This document is an early Working Draft to indicate the direction we are heading with this incremental version of XHTML and solicit feedback from the community.

Publication as a Working Draft does not imply endorsement by the W3C Membership. This is a draft document and may be updated, replaced or obsoleted by other documents at any time. It is inappropriate to cite this document as other than work in progress.

This document has been produced by the W3C XHTML 2 Working Group (*members only*) as part of the W3C HTML Activity. The goals of the XHTML 2 Working Group are discussed in the HTML Working Group charter.

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1. Introduction

This section is *informative*.

With the introduction of XHTML Modularization [XHTMLMOD [p.??]], it became much easier for language designers to assemble specialized markup languages using the XHTML building blocks. XHTML Modularization also defines a methodology for creating new building blocks that will connect easily with one another. The W3C has been using this methodology for the past several years to define a number of new language features with particular focus upon accessibility [WAI [p.??]] and semantics.

XHTML 1.2 represents the next logical step in that effort, collecting together a number of these features that are now mature and connecting them to XHTML 1.1 [XHTML11 [p.15]] in a way that is backward compatible. The goal of this effort is to demonstrate that these features are usable now, and provide substantial benefit with little or no added cost to content authors.

The major new features in XHTML 1.2 include:

- The "access" element.

  The `access` element allows the easy connection of areas of a document and facilitates navigation among those areas [ACCESS [p.??]].

- The "role" attribute.

  The `role` attribute allows the annotation of content with information about the role it plays in the document. It can be used on its own or in conjunction with the `access` element to improve accessibility [ROLE [p.??]]./p>

- The RDFa attributes.

  RDFa allows for the easy, intuitive annotation of XHTML documents with semantic information that is automatically parseable by major search engines [RDFA [p.??]].

2. Conformance Definition

This section is *normative*.

The keywords "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [RFC2119] [p.15] .

2.1. Document Conformance

This version of XHTML provides a definition of strictly conforming XHTML documents, which are restricted to elements and attributes from the XHTML namespace.

2.1.1. Strictly Conforming Documents

A strictly conforming XHTML 1.2 document is a document that requires only the facilities described as mandatory in this specification. Such a document MUST meet all the following criteria:

1. The document MUST conform to the constraints expressed in the schemas in Appendix D - XHTML 1.2 Schema [p.31] and Appendix C - XHTML 1.2 Document Type Definition [p.17] .

2. The local part of the root element of the document MUST be `html`.

3. The start tag of the root element of the document MUST explicitly contain an `xmlns` declaration for the XHTML namespace [XMLNS [p.16]]. The namespace URI for XHTML is defined to be `http://www.w3.org/1999/xhtml`.

   The start tag MAY also contain an `xsi:schemaLocation` attribute that associates this namespace with the XML Schema at the URI `http://www.w3.org/MarkUp/SCHEMA/xhtml11.xsd`.

   Sample root element

   ```
   <html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en"
         xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
         xsi:schemaLocation="http://www.w3.org/1999/xhtml
                             http://www.w3.org/MarkUp/SCHEMA/xhtml11.xsd"
   >
   ```

4. The start tag SHOULD contain a `version` attribute that declares the version of XHTML in use. The version of this version of XHTML is `XHTML 1.2`.
5. Documents written using the markup language defined in this specification can be validated using the DTD defined in Appendix A [p.??] . If a document author wants to faciliate such validation, the document MAY include a DOCTYPE declaration at the top of their document.

For example:

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.2//EN"
    "http://www.w3.org/TR/xhtml11/DTD/xhtml11.dtd">
```

The SYSTEM identifier MAY be modified as appropriate.

Example of an XHTML 1.2 document

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.2//EN"
    "http://www.w3.org/TR/xhtml11/DTD/xhtml11.dtd">
<html version="XHTML 1.2"
      xmlns="http://www.w3.org/1999/xhtml" xml:lang="en"
      xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
      xsi:schemaLocation="http://www.w3.org/1999/xhtml
                          http://www.w3.org/MarkUp/SCHEMA/xhtml11.xsd"
>
  <head>
    <title>Virtual Library</title>
  </head>
  <body>
    <p>Moved to <a href="http://example.org/">example.org</a>.</p>
  </body>
</html>
```

Note that in this example, the XML declaration is included. An XML declaration like the one above is not required in all XML documents. XHTML document authors SHOULD use XML declarations in all their documents. XHTML document authors MUST use an XML declaration when the character encoding of the document is other than the default UTF-8 or UTF-16 and no encoding is specified by a higher-level protocol.

XHTML 1.2 documents SHOULD be labeled with the Internet Media Type "application/xhtml+xml" as defined in [RFC3236 [p.??]]. For further information on using media types with XHTML, see the informative note [XHTMLMIME [p.??]].

2.2. User Agent Conformance

A conforming user agent MUST meet all user agent conformance requirements defined in [XHTMLMOD [p.15]].

3. The XHTML 1.2 Document Type

This section is *normative*.

The XHTML 1.2 document type is a fully functional document type with rich semantics. It builds upon the definitions of XHTML 1.1 [XHTML11 [p.15]] and XHTML Basic 1.1 [XHTMLBASIC [p.??]]. Consequently, it is a true superset of those earlier languages. It also adds in some features that have been recently completed, but are nonetheless immediately useful in modern user agents.

The XHTML 1.2 document type is made up of the following XHTML modules. The elements, attributes, and minimal content models associated with these modules are defined in "XHTML Modularization" [XHTMLMOD [p.15]]). The elements are listed here for information purposes, but the definitions in "XHTML Modularization" should be considered definitive. In the on-line version of this document, the module names in the list below link into the definitions of the modules within the current version of "XHTML Modularization".

Structure Module*
    `body, head, html, title`
Text Module*
    `abbr, acronym, address, blockquote, br, cite, code, dfn, div, em, h1, h2, h3, h4, h5, h6, kbd, p, pre, q, samp, span, strong, var`
Hypertext Module*
    `a`
List Module*
    `dl, dt, dd, ol, ul, li`
Object Module
    `object, param`
Presentation Module
    `b, big, hr, i, small, sub, sup, tt`
Edit Module
    `del, ins`
Bidirectional Text Module
    `bdo`
Forms Module
    `button, fieldset, form, input, label, legend, select, optgroup, option, textarea`
Table Module
    `caption, col, colgroup, table, tbody, td, tfoot, th, thead, tr`
Image Module
    `img`
Server-side Image Map Module
    Attribute `ismap` on `img`
Intrinsic Events Module
    Events attributes

Metainformation Module
`meta`
Scripting Module
`noscript, script`
Stylesheet Module
`style` element
Style Attribute Module *Deprecated*
`style` attribute
Link Module
`link`
Base Module
`base`
Target Attribute Module
`target` attribute

Note:

1. The target attribute is designed to be a general hook for binding to an external environment (such as Frames, multiple windows, browser-tabbed windows); when there is no such external environment bound to the user agent, the user agent can ignore the target attribute. When there is an external environment bound, the conformance requirements for the target attribute are defined in each environment.
2. The content author needs to be aware that the user agent behavior for the target attribute depends on multiple factors such as the existence of an environment binding, restrictions of available resources, existence of other applications and user preferences (such as pop-up blockers), and implemententation-dependent design decisions. When there is no external environmental conformance, it is recommended that authors do not depend on use of the target attribute.
3. It should be noted that any implementation-dependent use of the target attribute might impede interoperability.

XHTML 1.2 incorporates the following locally defined modules:

Client-side Image Map Module
`area, map`
Implements Attribute Module
`implements` attribute for `script` element

XHTML 1.2 also uses the following modules defined in other W3C Recommendations:

Ruby Annotation module as defined in [RUBY [p.15]]:

Ruby Annotation Module
`ruby, rbc, rtc, rb, rt, rp`

XHTML Access module as defined in [ACCESS [p.??]]:

XHTML Access Module
`access`

XHTML Role module as defined in [ROLE [p.??]]:

XHTML Role Module
`role` attribute

XHTML Metainformation Attributes module as defined in [RDFa [p.??]]:

XHTML Metainformation Attributes Module
`about`, `content`, `datatype`, `typeof`, `property`, `rel`, `resource`, `rev`

XHTML inputmode Attribute Module as defined in [XHTMLBASIC [p.??]].

XHTML inputmode Attribute Module
`inputmode` attribute is added to the `input` and `textarea` elements of the XHTML Forms Module.

WAI-ARIA Attribute Module as defined in [WAIARIA [p.??]].

There are no additional definitions required by this document type. An implementation of this document type as an XML Schema is defined in Appendix D [p.31] , and as an XML DTD is defined in Appendix C [p.17] . If there is any discrepancy between the language as defined in this section and the implementations in the appendices, the definition in this section MUST take precedence.

A. Changes from XHTML 1.1

This appendix is *informative*.

This Appendix describes the differences between XHTML 1.2 and XHTML 1.1.

The differences can be summarized as follows:

1. *At Risk* The `access` element [ACCESS [p.??]] has been added to the content model for `head`.
2. *At Risk* The WAI-ARIA attributes [WAIARIA [p.??]] have been added to every element.
3. The `implements` attribute [IMPLEMENTS [p.??]] has been added to the `script` element.
4. The `inputmode` attribute has been brought in from XHTML Basic 1.1 [XHTMLBASIC [p.??]].
5. The `lang` attribute has been re-introduced (it was omitted from XHTML 1.1).
6. The `target` attribute has been re-introduced (it was omitted from XHTML 1.1).
7. The `role` attribute [ROLE [p.??]] has been added on every element.
8. The RDFa attributes [RDFA [p.??]] have been added to every element.
9. The datatype of the `usemap` attribute, as defined in the Client-side Image Map module, is changed from `IDREF` to `URI`.

B. References

This appendix is *normative*.

B.1. Normative References

[HTML4]
HTML 4.01 Specification, W3C Recommendation, Dave Raggett, Arnaud Le Hors, Ian Jacobs, 24 December 1999.
See: http://www.w3.org/TR/1999/REC-html401-19991224

[RUBY]
Ruby Annotation, W3C Recommendation, Marcin Sawicki, et al., 31 May 2001.
See: http://www.w3.org/TR/2001/REC-ruby-20010531

[XHTML11]
XHTML 1.1: Module-based XHTML, W3C Recommendation, Steven Pemberton, et al., 31 May 2001.
See: http://www.w3.org/TR/2001/REC-xhtml11-20010531

[XHTMLACCESS]
XHTML Access Module, W3C Working Draft, Shane McCarron et al., 26 May 2008
See: http://www.w3.org/TR/2008/WD-xhtml-access-20080526

[XHTMLBASIC]
XHTML Basic 1.1, W3C Recommendation, Shane McCarron et al., 29 July 2008.
See: http://www.w3.org/TR/2008/REC-xhtml-basic-20080729

[XHTMLMOD]
XHTML Modularization 1.1, W3C Recommendation, Shane McCarron, et al., 8 October 2008
See: http://www.w3.org/TR/2008/REC-xhtml-modularization-20081008

[XHTMLROLE]
XHTML Role Attribute Module, W3C Working Draft, Shane McCarron et al., 7 April 2008
See: http://www.w3.org/TR/2008/WD-xhtml-role-20080407

[XML]
"*Extensible Markup Language (XML) 1.0 (Fourth Edition)*", W3C Recommendation, T. Bray *et al.*, *eds.*, 16 August 2006.
Available at: http://www.w3.org/TR/2006/REC-xml-20060816
The latest version is available at: http://www.w3.org/TR/REC-xml

B.2. Informative References

[CATALOG]
Entity Management: OASIS Technical Resolution 9401:1997 (Amendment 2 to TR 9401), Paul Grosso, Chair, Entity Management Subcommittee, SGML Open, 10 September 1997.
See: http://www.oasis-open.org/html/a401.htm

[RFC2119]
"*Key words for use in RFCs to indicate requirement levels*", RFC 2119, S. Bradner, March 1997.

Available at: http://www.ietf.org/rfc/rfc2119.txt

[RFC2854]

"The 'text/html' Media Type", D. Connely, L. Masinter, January 2000.
Available at: http://www.ietf.org/rfc/rfc2854.txt

[RFC3236]

"The 'application/xhtml+xml' Media Type", M. Baker, P. Stark, January 2002.
Available at: http://www.ietf.org/rfc/rfc3236.txt

[XHTMLMIME]

"*XHTML Media Types*", Masayasu Ishikawa, 1 August 2002.
Latest version available at: http://www.w3.org/TR/xhtml-media-types

[XMLNAMES]

"*Namespaces in XML*", W3C Recommendation, Tim Bray, Dave Hollander, Andrew Layman, 14 January 1999.
Available at: http://www.w3.org/TR/1999/REC-xml-names-19990114

[XMLSCHEMA]

"*XML Schema Part 1: Structures Second Edition*", W3C Recommendation, H. S. Thompson *et al.*, *eds.*, 28 October 2004.
Available at: http://www.w3.org/TR/2004/REC-xmlschema-1-20041028/
"*XML Schema Part 2: Datatypes Second Edition*", W3C Recommendation, P. V. Biron, A. Malhotra, *eds.*, 28 October 2004.
Available at: http://www.w3.org/TR/2004/REC-xmlschema-2-20041028/

C. XHTML 1.2 Document Type Definition

This appendix is *normative*.

C.1. SGML Open Catalog Entry for XHTML 1.2

This section contains the SGML Open Catalog-format definition [CATALOG [p.15]] of the public identifiers for XHTML 1.2.

```
-- ..................................................................... --
-- File catalog  ....................................................... --

--  XHTML 1.2 Catalog Data File

    Revision:  $Revision: 1.2 $

    See "Entity Management", SGML Open Technical Resolution 9401 for detailed
    information on supplying and using catalog data. This document is available
    from OASIS at URL:

        <http://www.oasis-open.org/html/tr9401.html>
--

-- ..................................................................... --
-- SGML declaration associated with XHTML  ............................. --

OVERRIDE YES

SGMLDECL "xml1.dcl"

-- ::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::: --

-- XHTML 1.2 DTD modular driver file  ................................... --
-- note that this uses the local, flattened version of the DTD. If you want
   your catalog to use the master version of the XHTML Modules, change the
   entry to reference xhtml11.dtd instead of xhtml11-flat.dtd
--

PUBLIC "-//W3C//DTD XHTML 1.2//EN"                                  "xhtml12.dtd"

-- XHTML 1.2 framework modules ...................................... --

PUBLIC "-//W3C//ENTITIES XHTML 1.2 Document Model 1.0//EN"        "xhtml12-model-1.mod"

PUBLIC "-//W3C//ELEMENTS XHTML Client-side Image Maps 1.1//EN"    "xhtml-csimap-2.mod"

PUBLIC "-//W3C//ELEMENTS XHTML Implements Attribute 1.0//EN"      "xhtml-implements-1.mod"

-- End of catalog data  ............................................... --
-- ..................................................................... --
```

C.2. XHTML 1.2 Driver

This section contains the driver for the XHTML 1.2 document type implementation as an XML DTD. It relies upon XHTML module implementations defined in [XHTMLMOD [p.15]], [ACCESS [p.??]], [ROLE [p.??]], [RDFA [p.??]], and [RUBY [p.15]].

```
<!-- ....................................................................... -->
<!-- XHTML 1.1 DTD  ....................................................... -->
<!-- file: xhtml11.dtd
-->

<!-- XHTML 1.1 DTD

     This is XHTML, a reformulation of HTML as a modular XML application.

     The Extensible HyperText Markup Language (XHTML)
     Copyright 1998-2008 World Wide Web Consortium
        (Massachusetts Institute of Technology, European Research Consortium
         for Informatics and Mathematics, Keio University).
         All Rights Reserved.

     Permission to use, copy, modify and distribute the XHTML DTD and its
     accompanying documentation for any purpose and without fee is hereby
     granted in perpetuity, provided that the above copyright notice and
     this paragraph appear in all copies.  The copyright holders make no
     representation about the suitability of the DTD for any purpose.

     It is provided "as is" without expressed or implied warranty.

        Author:     Murray M. Altheim <altheim@eng.sun.com>
        Revision:   $Id: xhtml12.ps,v 1.2 2008/12/23 21:35:02 smccarro Exp $

-->
<!-- This is the driver file for version 1.1 of the XHTML DTD.

     Please use this public identifier to identify it:

         "-//W3C//DTD XHTML 1.1//EN"
-->
<!ENTITY % XHTML.version  "-//W3C//DTD XHTML 1.1//EN" >

<!-- Use this URI to identify the default namespace:

         "http://www.w3.org/1999/xhtml"

     See the Qualified Names module for information
     on the use of namespace prefixes in the DTD.

     Note that XHTML namespace elements are not prefixed by default,
     but the XHTML namespace prefix is defined as "xhtml" so that
     other markup languages can extend this one and use the XHTML
     prefixed global attributes if required.

-->
<!ENTITY % NS.prefixed "IGNORE" >
```

```
<!ENTITY % XHTML.prefix "xhtml" >

<!-- Be sure to include prefixed global attributes - we don't need
     them, but languages that extend XHTML 1.1 might.
-->
<!ENTITY % XHTML.global.attrs.prefixed "INCLUDE" >

<!-- Reserved for use with the XLink namespace:
-->
<!ENTITY % XLINK.xmlns "" >
<!ENTITY % XLINK.xmlns.attrib "" >

<!-- For example, if you are using XHTML 1.1 directly, use the public
     identifier in the DOCTYPE declaration, with the namespace declaration
     on the document element to identify the default namespace:

       <?xml version="1.0"?>
       <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.1//EN"
                             "http://www.w3.org/MarkUp/DTD/xhtml11.dtd">
       <html xmlns="http://www.w3.org/1999/xhtml"
             xml:lang="en">
       ...
       </html>

     Revisions:
     (none)
-->

<!-- reserved for future use with document profiles -->
<!ENTITY % XHTML.profile  "" >

<!-- ensure XHTML Notations are disabled -->
<!ENTITY % xhtml-notations.module "IGNORE" >

<!-- Bidirectional Text features
     This feature-test entity is used to declare elements
     and attributes used for bidirectional text support.
-->
<!ENTITY % XHTML.bidi  "INCLUDE" >

<?doc type="doctype" role="title" { XHTML 1.1 } ?>

<!-- ....................................................................... -->

<!-- Pre-Framework Redeclaration placeholder  ..................... -->
<!-- this serves as a location to insert markup declarations
     into the DTD prior to the framework declarations.
-->
<!ENTITY % xhtml-prefw-redecl.module "IGNORE" >
<![%xhtml-prefw-redecl.module;[
%xhtml-prefw-redecl.mod;
<!-- end of xhtml-prefw-redecl.module -->]]>

<!ENTITY % xhtml-events.module "INCLUDE" >

<!-- Inline Style Module  ..................................... -->
<!ENTITY % xhtml-inlstyle.module "INCLUDE" >
```

```
<![%xhtml-inlstyle.module;[
<!ENTITY % xhtml-inlstyle.mod
     PUBLIC "-//W3C//ELEMENTS XHTML Inline Style 1.0//EN"
            "http://www.w3.org/MarkUp/DTD/xhtml-inlstyle-1.mod" >
%xhtml-inlstyle.mod;]]>

<!-- declare Document Model module instantiated in framework
-->
<!ENTITY % xhtml-model.mod
     PUBLIC "-//W3C//ENTITIES XHTML 1.1 Document Model 1.0//EN"
            "http://www.w3.org/MarkUp/DTD/xhtml11-model-1.mod" >

<!-- Modular Framework Module (required) ..................... -->
<!ENTITY % xhtml-framework.module "INCLUDE" >
<![%xhtml-framework.module;[
<!ENTITY % xhtml-framework.mod
     PUBLIC "-//W3C//ENTITIES XHTML Modular Framework 1.0//EN"
            "http://www.w3.org/MarkUp/DTD/xhtml-framework-1.mod" >
%xhtml-framework.mod;]]>

<!-- Post-Framework Redeclaration placeholder  ................ -->
<!-- this serves as a location to insert markup declarations
     into the DTD following the framework declarations.
-->
<!ENTITY % xhtml-postfw-redecl.module "IGNORE" >
<![%xhtml-postfw-redecl.module;[
%xhtml-postfw-redecl.mod;
<!-- end of xhtml-postfw-redecl.module -->]]>

<!-- Text Module (Required)  ................................. -->
<!ENTITY % xhtml-text.module "INCLUDE" >
<![%xhtml-text.module;[
<!ENTITY % xhtml-text.mod
     PUBLIC "-//W3C//ELEMENTS XHTML Text 1.0//EN"
            "http://www.w3.org/MarkUp/DTD/xhtml-text-1.mod" >
%xhtml-text.mod;]]>

<!-- Hypertext Module (required) ............................. -->
<!ENTITY % xhtml-hypertext.module "INCLUDE" >
<![%xhtml-hypertext.module;[
<!ENTITY % xhtml-hypertext.mod
     PUBLIC "-//W3C//ELEMENTS XHTML Hypertext 1.0//EN"
            "http://www.w3.org/MarkUp/DTD/xhtml-hypertext-1.mod" >
%xhtml-hypertext.mod;]]>

<!-- Lists Module (required)  ................................ -->
<!ENTITY % xhtml-list.module "INCLUDE" >
<![%xhtml-list.module;[
<!ENTITY % xhtml-list.mod
     PUBLIC "-//W3C//ELEMENTS XHTML Lists 1.0//EN"
            "http://www.w3.org/MarkUp/DTD/xhtml-list-1.mod" >
%xhtml-list.mod;]]>

<!-- ::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::: -->

<!-- Edit Module  ............................................ -->
<!ENTITY % xhtml-edit.module "INCLUDE" >
```

```
<![%xhtml-edit.module;[
<!ENTITY % xhtml-edit.mod
     PUBLIC "-//W3C//ELEMENTS XHTML Editing Elements 1.0//EN"
            "http://www.w3.org/MarkUp/DTD/xhtml-edit-1.mod" >
%xhtml-edit.mod;]]>

<!-- BIDI Override Module  ..................................... -->
<!ENTITY % xhtml-bdo.module "%XHTML.bidi;" >
<![%xhtml-bdo.module;[
<!ENTITY % xhtml-bdo.mod
     PUBLIC "-//W3C//ELEMENTS XHTML BIDI Override Element 1.0//EN"
            "http://www.w3.org/MarkUp/DTD/xhtml-bdo-1.mod" >
%xhtml-bdo.mod;]]>

<!-- Ruby Module  ............................................. -->
<!ENTITY % Ruby.common.attlists "INCLUDE" >
<!ENTITY % Ruby.common.attrib "%Common.attrib;" >
<!ENTITY % xhtml-ruby.module "INCLUDE" >
<![%xhtml-ruby.module;[
<!ENTITY % xhtml-ruby.mod
     PUBLIC "-//W3C//ELEMENTS XHTML Ruby 1.0//EN"
            "http://www.w3.org/MarkUp/DTD/ruby/xhtml-ruby-1.mod" >
%xhtml-ruby.mod;]]>

<!-- Presentation Module  ..................................... -->
<!ENTITY % xhtml-pres.module "INCLUDE" >
<![%xhtml-pres.module;[
<!ENTITY % xhtml-pres.mod
     PUBLIC "-//W3C//ELEMENTS XHTML Presentation 1.0//EN"
            "http://www.w3.org/MarkUp/DTD/xhtml-pres-1.mod" >
%xhtml-pres.mod;]]>

<!-- Link Element Module  ..................................... -->
<!ENTITY % xhtml-link.module "INCLUDE" >
<![%xhtml-link.module;[
<!ENTITY % xhtml-link.mod
     PUBLIC "-//W3C//ELEMENTS XHTML Link Element 1.0//EN"
            "http://www.w3.org/MarkUp/DTD/xhtml-link-1.mod" >
%xhtml-link.mod;]]>

<!-- Document Metainformation Module  ......................... -->
<!ENTITY % xhtml-meta.module "INCLUDE" >
<![%xhtml-meta.module;[
<!ENTITY % xhtml-meta.mod
     PUBLIC "-//W3C//ELEMENTS XHTML Metainformation 1.0//EN"
            "http://www.w3.org/MarkUp/DTD/xhtml-meta-1.mod" >
%xhtml-meta.mod;]]>

<!-- Base Element Module  ..................................... -->
<!ENTITY % xhtml-base.module "INCLUDE" >
<![%xhtml-base.module;[
<!ENTITY % xhtml-base.mod
     PUBLIC "-//W3C//ELEMENTS XHTML Base Element 1.0//EN"
            "http://www.w3.org/MarkUp/DTD/xhtml-base-1.mod" >
%xhtml-base.mod;]]>

<!-- Scripting Module  ........................................ -->
```

```
<!ENTITY % xhtml-script.module "INCLUDE" >
<![%xhtml-script.module;[
<!ENTITY % xhtml-script.mod
     PUBLIC "-//W3C//ELEMENTS XHTML Scripting 1.0//EN"
            "http://www.w3.org/MarkUp/DTD/xhtml-script-1.mod" >
%xhtml-script.mod;]]>

<!-- Implements Attribute Module  ............................. -->
<!ENTITY % xhtml-implements.module "INCLUDE" >
<![%xhtml-implements.module;[
<!ENTITY % xhtml-implements.mod
     PUBLIC "-//W3C//ELEMENTS XHTML Implements Attribute 1.0//EN"
            "http://www.w3.org/MarkUp/DTD/xhtml-implements-1.mod" >
%xhtml-implements.mod;]]>

<!-- Style Sheets Module  ..................................... -->
<!ENTITY % xhtml-style.module "INCLUDE" >
<![%xhtml-style.module;[
<!ENTITY % xhtml-style.mod
     PUBLIC "-//W3C//ELEMENTS XHTML Style Sheets 1.0//EN"
            "http://www.w3.org/MarkUp/DTD/xhtml-style-1.mod" >
%xhtml-style.mod;]]>

<!-- Image Module  ............................................ -->
<!ENTITY % xhtml-image.module "INCLUDE" >
<![%xhtml-image.module;[
<!ENTITY % xhtml-image.mod
     PUBLIC "-//W3C//ELEMENTS XHTML Images 1.0//EN"
            "http://www.w3.org/MarkUp/DTD/xhtml-image-1.mod" >
%xhtml-image.mod;]]>

<!-- Client-side Image Map Module  ............................ -->
<!ENTITY % xhtml-csismap.module "INCLUDE" >
<![%xhtml-csismap.module;[
<!ENTITY % xhtml-csismap.mod
     PUBLIC "-//W3C//ELEMENTS XHTML Client-side Image Maps 1.1//EN"
            "http://www.w3.org/MarkUp/DTD/xhtml-csismap-2.mod" >
%xhtml-csismap.mod;]]>

<!-- Server-side Image Map Module  ............................ -->
<!ENTITY % xhtml-ssismap.module "INCLUDE" >
<![%xhtml-ssismap.module;[
<!ENTITY % xhtml-ssismap.mod
     PUBLIC "-//W3C//ELEMENTS XHTML Server-side Image Maps 1.0//EN"
            "http://www.w3.org/MarkUp/DTD/xhtml-ssismap-1.mod" >
%xhtml-ssismap.mod;]]>

<!-- Param Element Module  .................................... -->
<!ENTITY % xhtml-param.module "INCLUDE" >
<![%xhtml-param.module;[
<!ENTITY % xhtml-param.mod
     PUBLIC "-//W3C//ELEMENTS XHTML Param Element 1.0//EN"
            "http://www.w3.org/MarkUp/DTD/xhtml-param-1.mod" >
%xhtml-param.mod;]]>

<!-- Embedded Object Module  .................................. -->
<!ENTITY % xhtml-object.module "INCLUDE" >
```

```
<![%xhtml-object.module;[
<!ENTITY % xhtml-object.mod
     PUBLIC "-//W3C//ELEMENTS XHTML Embedded Object 1.0//EN"
            "http://www.w3.org/MarkUp/DTD/xhtml-object-1.mod" >
%xhtml-object.mod;]]>

<!-- Tables Module ..................................................... -->
<!ENTITY % xhtml-table.module "INCLUDE" >
<![%xhtml-table.module;[
<!ENTITY % xhtml-table.mod
     PUBLIC "-//W3C//ELEMENTS XHTML Tables 1.0//EN"
            "http://www.w3.org/MarkUp/DTD/xhtml-table-1.mod" >
%xhtml-table.mod;]]>

<!-- Forms Module  ..................................................... -->
<!ENTITY % xhtml-form.module "INCLUDE" >
<![%xhtml-form.module;[
<!ENTITY % xhtml-form.mod
     PUBLIC "-//W3C//ELEMENTS XHTML Forms 1.0//EN"
            "http://www.w3.org/MarkUp/DTD/xhtml-form-1.mod" >
%xhtml-form.mod;]]>

<!-- Legacy Markup ..................................................... -->
<!ENTITY % xhtml-legacy.module "IGNORE" >
<![%xhtml-legacy.module;[
<!ENTITY % xhtml-legacy.mod
     PUBLIC "-//W3C//ELEMENTS XHTML Legacy Markup 1.0//EN"
            "http://www.w3.org/MarkUp/DTD/xhtml-legacy-1.mod" >
%xhtml-legacy.mod;]]>

<!-- Document Structure Module (required)  ..................... -->
<!ENTITY % xhtml-struct.module "INCLUDE" >
<![%xhtml-struct.module;[
<!ENTITY % xhtml-struct.mod
     PUBLIC "-//W3C//ELEMENTS XHTML Document Structure 1.0//EN"
            "http://www.w3.org/MarkUp/DTD/xhtml-struct-1.mod" >
%xhtml-struct.mod;]]>

<!-- end of XHTML 1.1 DTD  ..................................................... -->
<!-- ..................................................................... -->
```

C.3. XHTML 1.2 Customizations

An XHTML Family Document Type (such as XHTML 1.2) must define the content model that it uses. This is done through a separate content model module that is instantiated by the XHTML Modular Framework. The content model module and the XHTML 1.2 Driver (above) work together to customize the module implementations to the document type's specific requirements. The content model module for XHTML 1.2 is defined below:

```
<!-- ..................................................................... -->
<!-- XHTML 1.1 Document Model Module  ..................................... -->
<!-- file: xhtml11-model-1.mod

     This is XHTML 1.1, a reformulation of HTML as a modular XML application.
     Copyright 1998-2008 W3C (MIT, ERCIM, Keio), All Rights Reserved.
```

```
      Revision: $Id: xhtml12.ps,v 1.2 2008/12/23 21:35:02 smccarro Exp $ SMI

      This DTD module is identified by the PUBLIC and SYSTEM identifiers:

        PUBLIC "-//W3C//ENTITIES XHTML 1.1 Document Model 1.0//EN"
        SYSTEM "http://www.w3.org/MarkUp/DTD/xhtml11-model-1.mod"

      Revisions:
      (none)
      ..................................................................... -->

<!-- XHTML 1.1 Document Model

      This module describes the groupings of elements that make up
      common content models for XHTML elements.

      XHTML has three basic content models:

          %Inline.mix;  character-level elements
          %Block.mix;   block-like elements, eg., paragraphs and lists
          %Flow.mix;    any block or inline elements

      Any parameter entities declared in this module may be used
      to create element content models, but the above three are
      considered 'global' (insofar as that term applies here).

      The reserved word '#PCDATA' (indicating a text string) is now
      included explicitly with each element declaration that is
      declared as mixed content, as XML requires that this token
      occur first in a content model specification.
-->
<!-- Extending the Model

      While in some cases this module may need to be rewritten to
      accommodate changes to the document model, minor extensions
      may be accomplished by redeclaring any of the three *.extra;
      parameter entities to contain extension element types as follows:

          %Misc.extra;    whose parent may be any block or
                          inline element.

          %Inline.extra;  whose parent may be any inline element.

          %Block.extra;   whose parent may be any block element.

      If used, these parameter entities must be an OR-separated
      list beginning with an OR separator ("|"), eg., "| a | b | c"

      All block and inline *.class parameter entities not part
      of the *struct.class classes begin with "| " to allow for
      exclusion from mixes.
-->

<!-- ..............  Optional Elements in head  .................. -->

<!ENTITY % HeadOpts.mix
     "( %script.qname; | %style.qname; | %meta.qname;
```

```
      | %link.qname; | %object.qname; )*"
>

<!-- .................  Miscellaneous Elements  .................. -->

<!-- ins and del are used to denote editing changes
-->
<!ENTITY % Edit.class "| %ins.qname; | %del.qname;" >

<!-- script and noscript are used to contain scripts
     and alternative content
-->
<!ENTITY % Script.class "| %script.qname; | %noscript.qname;" >

<!ENTITY % Misc.extra "" >

<!-- These elements are neither block nor inline, and can
     essentially be used anywhere in the document body.
-->
<!ENTITY % Misc.class
     "%Edit.class;
      %Script.class;
      %Misc.extra;"
>

<!-- ...................  Inline Elements  ..................... -->

<!ENTITY % InlStruct.class "%br.qname; | %span.qname;" >

<!ENTITY % InlPhras.class
     "| %em.qname; | %strong.qname; | %dfn.qname; | %code.qname;
      | %samp.qname; | %kbd.qname; | %var.qname; | %cite.qname;
      | %abbr.qname; | %acronym.qname; | %q.qname;" >

<!ENTITY % InlPres.class
     "| %tt.qname; | %i.qname; | %b.qname; | %big.qname;
      | %small.qname; | %sub.qname; | %sup.qname;" >

<!ENTITY % I18n.class "| %bdo.qname;" >

<!ENTITY % Anchor.class "| %a.qname;" >

<!ENTITY % InlSpecial.class
     "| %img.qname; | %map.qname;
      | %object.qname;" >

<!ENTITY % InlForm.class
     "| %input.qname; | %select.qname; | %textarea.qname;
      | %label.qname; | %button.qname;" >

<!ENTITY % Inline.extra "" >

<!ENTITY % Ruby.class "| %ruby.qname;" >

<!-- %Inline.class; includes all inline elements,
     used as a component in mixes
-->
```

```
<!ENTITY % Inline.class
     "%InlStruct.class;
      %InlPhras.class;
      %InlPres.class;
      %I18n.class;
      %Anchor.class;
      %InlSpecial.class;
      %InlForm.class;
      %Ruby.class;
      %Inline.extra;"
>

<!-- %InlNoRuby.class; includes all inline elements
     except ruby, used as a component in mixes
-->
<!ENTITY % InlNoRuby.class
     "%InlStruct.class;
      %InlPhras.class;
      %InlPres.class;
      %I18n.class;
      %Anchor.class;
      %InlSpecial.class;
      %InlForm.class;
      %Inline.extra;"
>

<!-- %NoRuby.content; includes all inlines except ruby
-->
<!ENTITY % NoRuby.content
     "( #PCDATA
      | %InlNoRuby.class;
      %Misc.class; )*"
>

<!-- %InlNoAnchor.class; includes all non-anchor inlines,
     used as a component in mixes
-->
<!ENTITY % InlNoAnchor.class
     "%InlStruct.class;
      %InlPhras.class;
      %InlPres.class;
      %I18n.class;
      %InlSpecial.class;
      %InlForm.class;
      %Ruby.class;
      %Inline.extra;"
>

<!-- %InlNoAnchor.mix; includes all non-anchor inlines
-->
<!ENTITY % InlNoAnchor.mix
     "%InlNoAnchor.class;
      %Misc.class;"
>

<!-- %Inline.mix; includes all inline elements, including %Misc.class;
-->
```

```
<!ENTITY % Inline.mix
     "%Inline.class;
      %Misc.class;"
>

<!-- ..................  Block Elements  ..................... -->

<!-- In the HTML 4.0 DTD, heading and list elements were included
     in the %block; parameter entity. The %Heading.class; and
     %List.class; parameter entities must now be included explicitly
     on element declarations where desired.
-->

<!ENTITY % Heading.class
     "%h1.qname; | %h2.qname; | %h3.qname;
      | %h4.qname; | %h5.qname; | %h6.qname;" >

<!ENTITY % List.class "%ul.qname; | %ol.qname; | %dl.qname;" >

<!ENTITY % Table.class "| %table.qname;" >

<!ENTITY % Form.class  "| %form.qname;" >

<!ENTITY % Fieldset.class  "| %fieldset.qname;" >

<!ENTITY % BlkStruct.class "%p.qname; | %div.qname;" >

<!ENTITY % BlkPhras.class
     "| %pre.qname; | %blockquote.qname; | %address.qname;" >

<!ENTITY % BlkPres.class "| %hr.qname;" >

<!ENTITY % BlkSpecial.class
     "%Table.class;
      %Form.class;
      %Fieldset.class;"
>

<!ENTITY % Block.extra "" >

<!-- %Block.class; includes all block elements,
     used as an component in mixes
-->
<!ENTITY % Block.class
     "%BlkStruct.class;
      %BlkPhras.class;
      %BlkPres.class;
      %BlkSpecial.class;
      %Block.extra;"
>

<!-- %Block.mix; includes all block elements plus %Misc.class;
-->
<!ENTITY % Block.mix
     "%Heading.class;
      | %List.class;
      | %Block.class;
```

```
      %Misc.class;"
>

<!-- ................  All Content Elements  .................. -->

<!-- %Flow.mix; includes all text content, block and inline
-->
<!ENTITY % Flow.mix
     "%Heading.class;
      | %List.class;
      | %Block.class;
      | %Inline.class;
      %Misc.class;"
>

<!-- end of xhtml11-model-1.mod -->

<!-- ..................................................................... -->
<!-- XHTML Client-side Image Map Module  ................................ -->
<!-- file: xhtml-csismap-2.mod

     This is XHTML, a reformulation of HTML as a modular XML application.
     Copyright 1998-2008 W3C (MIT, ERCIM, Keio), All Rights Reserved.
     Revision: $Id: xhtml12.ps,v 1.2 2008/12/23 21:35:02 smccarro Exp $ SMI

     This DTD module is identified by the PUBLIC and SYSTEM identifiers:

       PUBLIC "-//W3C//ELEMENTS XHTML Client-side Image Maps 1.1//EN"
       SYSTEM "http://www.w3.org/MarkUp/DTD/xhtml-csismap-2.mod"

     Revisions:
     (none)
     ..................................................................... -->

<!-- Client-side Image Maps

        area, map

     This module declares elements and attributes to support client-side
     image maps. This requires that the Image Module (or a module
     declaring the img element type) be included in the DTD.

     These can be placed in the same document or grouped in a
     separate document, although the latter isn't widely supported
-->

<!ENTITY % area.element  "INCLUDE" >
<![%area.element;[
<!ENTITY % area.content  "EMPTY" >
<!ENTITY % area.qname  "area" >
<!ELEMENT %area.qname;  %area.content; >
<!-- end of area.element -->]]>

<!ENTITY % Shape.datatype "( rect | circle | poly | default )">
<!ENTITY % Coords.datatype "CDATA" >

<!ENTITY % area.attlist  "INCLUDE" >
```

```
<![%area.attlist;[
<!ATTLIST %area.qname;
      %Common.attrib;
      href         %URI.datatype;           #IMPLIED
      shape        %Shape.datatype;         'rect'
      coords       %Coords.datatype;        #IMPLIED
      nohref       ( nohref )               #IMPLIED
      alt          %Text.datatype;          #REQUIRED
      tabindex     %Number.datatype;        #IMPLIED
      accesskey    %Character.datatype;     #IMPLIED
>
<!-- end of area.attlist -->]]>

<!-- modify anchor attribute definition list
     to allow for client-side image maps
-->
<!ATTLIST %a.qname;
      shape        %Shape.datatype;         'rect'
      coords       %Coords.datatype;        #IMPLIED
>

<!-- modify img attribute definition list
     to allow for client-side image maps
-->
<!ATTLIST %img.qname;
      usemap       %URI.datatype;           #IMPLIED
>

<!-- modify form input attribute definition list
     to allow for client-side image maps
-->
<!ATTLIST %input.qname;
      usemap       %URI.datatype;           #IMPLIED
>

<!-- modify object attribute definition list
     to allow for client-side image maps
-->
<!ATTLIST %object.qname;
      usemap       %URI.datatype;           #IMPLIED
>

<!-- 'usemap' points to the 'id' attribute of a <map> element,
     which must be in the same document; support for external
     document maps was not widely supported in HTML and is
     eliminated in XHTML.

     It is considered an error for the element pointed to by
     a usemap IDREF to occur in anything but a <map> element.
-->

<!ENTITY % map.element  "INCLUDE" >
<![%map.element;[
<!ENTITY % map.content
     "(( %Block.mix; ) | %area.qname; )+"
>
<!ENTITY % map.qname  "map" >
```

```
<!ELEMENT %map.qname;  %map.content; >
<!-- end of map.element -->]]>

<!ENTITY % map.attlist  "INCLUDE" >
<![%map.attlist;[
<!ATTLIST %map.qname;
      %XHTML.xmlns.attrib;
      id           ID                       #REQUIRED
      %class.attrib;
      %title.attrib;
      %Core.extra.attrib;
      %I18n.attrib;
      %Events.attrib;
>
<!-- end of map.attlist -->]]>

<!-- end of xhtml-csismap-1.mod -->

<!-- ....................................................................... -->
<!-- XHTML Implements Attribute Module  ..................................... -->
<!-- file: xhtml-implements-1.mod

     This is XHTML, a reformulation of HTML as a modular XML application.
     Copyright 1998-2008 W3C (MIT, ERCIM, Keio), All Rights Reserved.
     Revision: $Id: xhtml12.ps,v 1.2 2008/12/23 21:35:02 smccarro Exp $ SMI

     This DTD module is identified by the PUBLIC and SYSTEM identifiers:

       PUBLIC "-//W3C//ELEMENTS XHTML Implements Attribute 1.0//EN"
       SYSTEM "http://www.w3.org/MarkUp/DTD/xhtml-implements-1.mod"

     Revisions:
     (none)
     ....................................................................... -->

<!-- Implements Attribute

        implements

     This module declares the 'implements' attribute used for declaring
     an identifier for what a script implements.
-->

<!-- add 'target' attribute to 'a' element -->
<!ATTLIST %script.qname;
      implements       %URIorSafeCURIEs.datatype;        #IMPLIED
>

<!-- end of xhtml-implements-1.mod -->
```

D. XHTML 1.2 XML Schema Definition

This appendix is *normative*.

D.1. XHTML 1.2 Schema Driver

This section contains the driver for the XHTML 1.2 document type implementation as an XML Schema. It relies upon XHTML module implementations defined in [XHTMLMOD [p.15]], [ACCESS [p.??]], [ROLE [p.??]], [RDFA [p.??]], and [RUBY [p.15]].

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema
    xmlns:xs="http://www.w3.org/2001/XMLSchema"
    targetNamespace="http://www.w3.org/1999/xhtml"
    xmlns:xh11d="http://www.w3.org/1999/xhtml/datatypes/"
    xmlns="http://www.w3.org/1999/xhtml"
    elementFormDefault="qualified" >
    <xs:annotation>
        <xs:documentation>
      This is the XML Schema driver for XHTML 1.1.
      Please use this namespace for XHTML elements:

          "http://www.w3.org/1999/xhtml"

      $Id: xhtml12.ps,v 1.2 2008/12/23 21:35:02 smccarro Exp $
    </xs:documentation>
        <xs:documentation source="xhtml-copyright-1.xsd"/>
    </xs:annotation>
    <xs:annotation>
        <xs:documentation>
      This is XHTML, a reformulation of HTML as a modular XML application
      The Extensible HyperText Markup Language (XHTML)
      Copyright &#169;1998-2007 World Wide Web Consortium
      (Massachusetts Institute of Technology, European Research Consortium
       for Informatics and Mathematics, Keio University).
      All Rights Reserved.

      Permission to use, copy, modify and distribute the XHTML Schema
      modules and their accompanying xs:documentation for any purpose
      and without fee is hereby granted in perpetuity, provided that the above
      copyright notice and this paragraph appear in all copies.
      The copyright holders make no representation about the suitability of
      these XML Schema modules for any purpose.

      They are provided "as is" without expressed or implied warranty.
    </xs:documentation>
    </xs:annotation>
    <xs:annotation>
        <xs:documentation>
      This is the Schema Driver file for XHTML1.1
      Document Type

     This schema
        + imports external schemas (xml.xsd)
```

```
    + refedines (and include)s schema modules for XHTML1.1 Document Type.
    + includes Schema for Named content model for the
      XHTML1.1 Document Type

    XHTML1.1 Document Type includes the following Modules
       XHTML Core modules (Required for XHTML Family Conformance)
        +  text
        +  hypertext
        +  lists
        +  structure
       Other XHTML modules
        +  Edit
        +  Bdo
        +  Presentational
        +  Link
        +  Meta
        +  Base
        +  Scripting
        +  Style
        +  Image
        +  Applet
        +  Object
        +  Param (Applet/Object modules require Param Module)
        +  Tables
        +  Forms
        +  Client side image maps
        +  Server side image maps
        +  Ruby
</xs:documentation>
</xs:annotation>
<xs:import
    namespace="http://www.w3.org/XML/1998/namespace"
    schemaLocation="http://www.w3.org/2001/xml.xsd">
    <xs:annotation>
        <xs:documentation>
     This import brings in the XML namespace attributes
     The XML attributes are used by various modules.
   </xs:documentation>
    </xs:annotation>
</xs:import>
<xs:include
    schemaLocation="xhtml11-model-1.xsd">
    <xs:annotation>
        <xs:documentation>
    Document Model module for the XHTML1.1 Document Type.
    This schema file defines all named models used by XHTML
    Modularization Framework for XHTML1.1 Document Type
  </xs:documentation>
    </xs:annotation>
</xs:include>
<xs:import
    namespace="http://www.w3.org/1999/xhtml/datatypes/"
    schemaLocation="xhtml-datatypes-1.xsd"/>
<xs:include
    schemaLocation="xhtml11-modules-1.xsd">
    <xs:annotation>
        <xs:documentation>
```

```
          Schema that includes all modules (and redefinitions)
          for XHTML1.1 Document Type.
             </xs:documentation>
          </xs:annotation>
      </xs:include>
</xs:schema>
```

D.2. XHTML 1.2 Schema Modules

XHTML Family implementations using XML Schema are required to provide their own schema module that imports the required modules from XHTML Modularization.

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
           elementFormDefault="qualified"
           xmlns:xh11d="http://www.w3.org/1999/xhtml/datatypes/" >
    <xs:import namespace="http://www.w3.org/1999/xhtml/datatypes/"
               schemaLocation="xhtml-datatypes-1.xsd" />

    <xs:annotation>
        <xs:documentation>
      This schema includes all modules for XHTML1.2 Document Type.
      $Id: xhtml12.ps,v 1.2 2008/12/23 21:35:02 smccarro Exp $
    </xs:documentation>
        <xs:documentation source="xhtml-copyright-1.xsd"/>
    </xs:annotation>
    <xs:annotation>
        <xs:documentation>
     This schema includes all modules (and redefinitions)
     for XHTML1.2 Document Type.
     XHTML1.2 Document Type includes the following Modules

       XHTML Core modules (Required for XHTML Family Conformance)
            +  text
            +  hypertext
            +  lists
            +  structure

       Other XHTML modules
            +  Edit
            +  Bdo
            +  Presentational
            +  Link
            +  Meta
            +  Base
            +  Scripting
            +  Style
            +  Image
            +  Applet
            +  Object
            +  Param (Applet/Object modules require Param Module)
            +  Tables
            +  Forms
            +  Client side image maps
            +  Server side image maps

    </xs:documentation>
    </xs:annotation>
    <xs:include schemaLocation="xhtml-framework-1.xsd">
        <xs:annotation>
            <xs:documentation>
        Schema Framework Component Modules:
            +  notations
            +  datatypes
            +  common attributes
            +  character entities
      </xs:documentation>
            <xs:documentation source="http://www.w3.org/TR/xhtml-modularization/abstract_modules.html#s_commonatts"/>
        </xs:annotation>
    </xs:include>
    <xs:include schemaLocation="xhtml-text-1.xsd">
        <xs:annotation>
            <xs:documentation>
        Text module

        The Text module includes declarations for all core
        text container elements and their attributes.

            +  block phrasal
            +  block structural
            +  inline phrasal
            +  inline structural

        Elements defined here:
          * address, blockquote, pre, h1, h2, h3, h4, h5, h6
```

```
      * div, p
      * abbr, acronym, cite, code, dfn, em, kbd, q, samp, strong, var
      * br, span
  </xs:documentation>
        <xs:documentation source="http://www.w3.org/TR/2001/REC-xhtml-modularization-20010410/abstract_modules.html#s_textmodule"/>
    </xs:annotation>
</xs:include>
<xs:redefine schemaLocation="xhtml-hypertext-1.xsd">
    <xs:annotation>
        <xs:documentation>
     Hypertext module

     Elements defined here:
      * a
  </xs:documentation>
        <xs:documentation source="http://www.w3.org/TR/2001/REC-xhtml-modularization-20010410/abstract_modules.html#s_hypertextmodule"/>
    </xs:annotation>
    <xs:attributeGroup name="xhtml.a.attlist">
        <xs:attributeGroup ref="xhtml.a.attlist"/>
        <xs:attributeGroup ref="xhtml.a.csim.attlist">
            <xs:annotation>
                <xs:documentation>
          Redefinition by Client Side Image Map Module
        </xs:documentation>
            </xs:annotation>
        </xs:attributeGroup>
        <xs:attributeGroup ref="xhtml.a.events.attlist">
            <xs:annotation>
                <xs:documentation>
          Redefinition by XHTML Event Attribute Module
        </xs:documentation>
            </xs:annotation>
        </xs:attributeGroup>
    </xs:attributeGroup>
</xs:redefine>
<xs:include schemaLocation="xhtml-list-1.xsd">
    <xs:annotation>
        <xs:documentation>
    Lists module

    Elements defined here:
      * dt, dd, dl, ol, ul, li
  </xs:documentation>
        <xs:documentation source="http://www.w3.org/TR/2001/REC-xhtml-modularization-20010410/abstract_modules.html#s_listmodule"/>
    </xs:annotation>
</xs:include>
<xs:redefine schemaLocation="xhtml-struct-1.xsd">
    <xs:annotation>
        <xs:documentation>
    Structural module

    Elements defined here:
      * title, head, body, html
  </xs:documentation>
        <xs:documentation source="http://www.w3.org/TR/2001/REC-xhtml-modularization-20010410/abstract_modules.html#s_structuremodule"/>
    </xs:annotation>
    <xs:attributeGroup name="xhtml.version.attrib">
        <xs:annotation>
            <xs:documentation>
        Redefinition by the XHTML11 Markup (for value of version attr)
     </xs:documentation>
        </xs:annotation>
        <xs:attribute name="version" type="xh11d:CDATA" fixed="-//W3C//DTD XHTML 1.2//EN"/>
    </xs:attributeGroup>
    <xs:attributeGroup name="xhtml.body.attlist">
        <xs:attributeGroup ref="xhtml.body.attlist">
            <xs:annotation>
                <xs:documentation>
          Original Body Attlist
        </xs:documentation>
            </xs:annotation>
        </xs:attributeGroup>
        <xs:attributeGroup ref="xhtml.body.events.attlist">
            <xs:annotation>
                <xs:documentation>
          Redefinition by XHTML Event Attribute Module
        </xs:documentation>
            </xs:annotation>
        </xs:attributeGroup>
    </xs:attributeGroup>
</xs:redefine>
<xs:include schemaLocation="xhtml-edit-1.xsd">
    <xs:annotation>
        <xs:documentation>
    Edit module

    Elements defined here:
      * ins, del
  </xs:documentation>
        <xs:documentation source="http://www.w3.org/TR/xhtml-modularization/abstract_modules.html#s_editmodule"/>
    </xs:annotation>
</xs:include>
<xs:include schemaLocation="xhtml-bdo-1.xsd">
    <xs:annotation>
        <xs:documentation>
    Bidirectional element module
```

```
    Elements defined here:
      * bdo
  </xs:documentation>
        <xs:documentation source="http://www.w3.org/TR/xhtml-modularization/abstract_modules.html#s_bdomodule"/>
    </xs:annotation>
</xs:include>
<xs:include schemaLocation="xhtml-pres-1.xsd">
    <xs:annotation>
        <xs:documentation>
    Presentational module

     Elements defined here:
       * hr, b, big, i, small,sub, sup, tt
  </xs:documentation>
        <xs:documentation source="http://www.w3.org/TR/xhtml-modularization/abstract_modules.html#s_presentationmodule"/>
    </xs:annotation>
</xs:include>
<xs:redefine schemaLocation="xhtml-link-1.xsd">
    <xs:annotation>
        <xs:documentation>
            Link module

            Elements defined here:
               * link
        </xs:documentation>
        <xs:documentation source="http://www.w3.org/TR/xhtml-modularization/abstract_modules.html#s_linkmodule"/>
    </xs:annotation>
    <xs:attributeGroup name="xhtml.link.attlist">
        <xs:annotation>
            <xs:documentation>
        Changes to XHTML Link Attlist
      </xs:documentation>
        </xs:annotation>
        <xs:attributeGroup ref="xhtml.link.attlist">
            <xs:annotation>
                <xs:documentation>
            Original Link Attributes (declared in Link Module)
         </xs:documentation>
            </xs:annotation>
        </xs:attributeGroup>
    </xs:attributeGroup>
</xs:redefine>
<xs:include schemaLocation="xhtml-meta-1.xsd">
    <xs:annotation>
        <xs:documentation>
    Meta module

    Elements defined here:
    * meta
  </xs:documentation>
        <xs:documentation source="http://www.w3.org/TR/xhtml-modularization/abstract_modules.html#s_metamodule"/>
    </xs:annotation>
</xs:include>
<xs:redefine schemaLocation="xhtml-base-1.xsd">
    <xs:annotation>
        <xs:documentation>
    Base module

    Elements defined here:
      * base
  </xs:documentation>
        <xs:documentation source="http://www.w3.org/TR/xhtml-modularization/abstract_modules.html#s_basemodule"/>
    </xs:annotation>
    <xs:attributeGroup name="xhtml.base.attlist">
        <xs:annotation>
            <xs:documentation>
        Changes to XHTML base Attlist
      </xs:documentation>
        </xs:annotation>
        <xs:attributeGroup ref="xhtml.base.attlist">
            <xs:annotation>
                <xs:documentation>
            Original Base Attributes (declared in Base Module)
         </xs:documentation>
            </xs:annotation>
        </xs:attributeGroup>
    </xs:attributeGroup>
</xs:redefine>
<xs:include schemaLocation="xhtml-script-1.xsd">
    <xs:annotation>
        <xs:documentation>
    Scripting module

    Elements defined here:
      * script, noscript
  </xs:documentation>
        <xs:documentation source="http://www.w3.org/TR/xhtml-modularization/abstract_modules.html#s_scriptmodule"/>
    </xs:annotation>
</xs:include>
<xs:include schemaLocation="xhtml-style-1.xsd">
    <xs:annotation>
        <xs:documentation>
    Style module

    Elements defined here:
```

```
      * style
  </xs:documentation>
        <xs:documentation source="http://www.w3.org/TR/xhtml-modularization/abstract_modules.html#s_stylemodule"/>
    </xs:annotation>
</xs:include>
<xs:include schemaLocation="xhtml-inlstyle-1.xsd">
    <xs:annotation>
        <xs:documentation>
    Style attribute module

    Attribute defined here:
      * style
  </xs:documentation>
        <xs:documentation source="http://www.w3.org/TR/xhtml-modularization/abstract_modules.html#s_styleattributemodule"/>
    </xs:annotation>
</xs:include>
<xs:redefine schemaLocation="xhtml-image-1.xsd">
    <xs:annotation>
        <xs:documentation>
    Image module

    Elements defined here:
      * img
  </xs:documentation>
        <xs:documentation source="http://www.w3.org/TR/xhtml-modularization/abstract_modules.html#s_imagemodule"/>
    </xs:annotation>
    <xs:attributeGroup name="xhtml.img.attlist">
        <xs:attributeGroup ref="xhtml.img.attlist">
            <xs:annotation>
                <xs:documentation>
            Original Image Attributes (in Image Module)
         </xs:documentation>
            </xs:annotation>
        </xs:attributeGroup>
        <xs:attributeGroup ref="xhtml.img.csim.attlist">
            <xs:annotation>
                <xs:documentation>
            Redefinition by Client Side Image Map Module
         </xs:documentation>
            </xs:annotation>
        </xs:attributeGroup>
        <xs:attributeGroup ref="xhtml.img.ssimap.attlist">
            <xs:annotation>
                <xs:documentation>
            Redefinition by Server Side Image Module
         </xs:documentation>
            </xs:annotation>
        </xs:attributeGroup>
    </xs:attributeGroup>
</xs:redefine>
<xs:redefine schemaLocation="xhtml-csismap-2.xsd">
    <xs:annotation>
        <xs:documentation>
    Client-side mage maps module

    Elements defined here:
      * area, map
  </xs:documentation>
        <xs:documentation source="http://www.w3.org/TR/xhtml-modularization/abstract_modules.html#s_imapmodule"/>
    </xs:annotation>
    <xs:attributeGroup name="xhtml.area.attlist">
        <xs:attributeGroup ref="xhtml.area.attlist">
            <xs:annotation>
                <xs:documentation>
            Original Area Attributes (in CSI Module)
         </xs:documentation>
            </xs:annotation>
        </xs:attributeGroup>
        <xs:attributeGroup ref="xhtml.area.events.attlist">
            <xs:annotation>
                <xs:documentation>
            Redefinition by Events Attribute Module
         </xs:documentation>
            </xs:annotation>
        </xs:attributeGroup>
    </xs:attributeGroup>
</xs:redefine>
<xs:include schemaLocation="xhtml-ssismap-1.xsd">
    <xs:annotation>
        <xs:documentation>
   Server-side image maps module

    Attributes defined here:
      * ismap on img
  </xs:documentation>
        <xs:documentation source="http://www.w3.org/TR/xhtml-modularization/abstract_modules.html#s_servermapmodule"/>
    </xs:annotation>
</xs:include>
<xs:redefine schemaLocation="xhtml-object-1.xsd">
    <xs:annotation>
        <xs:documentation>
    Object module

    Elements defined here:
      * object
  </xs:documentation>
```

```
        <xs:documentation source="http://www.w3.org/TR/xhtml-modularization/abstract_modules.html#s_objectmodule"/>
    </xs:annotation>
    <xs:attributeGroup name="xhtml.object.attlist">
        <xs:attributeGroup ref="xhtml.object.attlist">
            <xs:annotation>
                <xs:documentation>
            Original Object Attlist
          </xs:documentation>
            </xs:annotation>
        </xs:attributeGroup>
        <xs:attributeGroup ref="xhtml.object.csim.attlist">
            <xs:annotation>
                <xs:documentation>
            Redefinition by Client Image Map Module
          </xs:documentation>
            </xs:annotation>
        </xs:attributeGroup>
    </xs:attributeGroup>
</xs:redefine>
<xs:include schemaLocation="xhtml-param-1.xsd">
    <xs:annotation>
        <xs:documentation>
    Param module

    Elements defined here:
      * param
  </xs:documentation>
    </xs:annotation>
</xs:include>
<xs:include schemaLocation="xhtml-table-1.xsd">
    <xs:annotation>
        <xs:documentation>
    Tables module

    Elements defined here:
      * table, caption, thead, tfoot, tbody, colgroup, col, tr, th, td
  </xs:documentation>
        <xs:documentation source="http://www.w3.org/TR/xhtml-modularization/abstract_modules.html#s_tablemodule"/>
    </xs:annotation>
</xs:include>
<xs:redefine schemaLocation="xhtml-form-1.xsd">
    <xs:annotation>
        <xs:documentation>
        Forms module

        Elements defined here:
          * form, label, input, select, optgroup, option,
          * textarea, fieldset, legend, button
      </xs:documentation>
        <xs:documentation source="http://www.w3.org/TR/xhtml-modularization/abstract_modules.html#s_extformsmodule"/>
    </xs:annotation>
    <xs:attributeGroup name="xhtml.form.attlist">
        <xs:annotation>
            <xs:documentation>
        Changes to XHTML Form Attlist
      </xs:documentation>
        </xs:annotation>
        <xs:attributeGroup ref="xhtml.form.attlist">
            <xs:annotation>
                <xs:documentation>
            Original Form Attributes (declared in Forms Module)
         </xs:documentation>
            </xs:annotation>
        </xs:attributeGroup>
        <xs:attributeGroup ref="xhtml.form.events.attlist">
            <xs:annotation>
                <xs:documentation>
            XHTML Events Module - Attribute additions
         </xs:documentation>
            </xs:annotation>
        </xs:attributeGroup>
    </xs:attributeGroup>
    <xs:attributeGroup name="xhtml.input.attlist">
        <xs:annotation>
            <xs:documentation>
        Changes to XHTML Form Input Element
      </xs:documentation>
        </xs:annotation>
        <xs:attributeGroup ref="xhtml.input.attlist">
            <xs:annotation>
                <xs:documentation>
            Original Input Attributes (in Forms Module)
         </xs:documentation>
            </xs:annotation>
        </xs:attributeGroup>
        <xs:attributeGroup ref="xhtml.input.csim.attlist">
            <xs:annotation>
                <xs:documentation>
            Redefinition by Client Side Image Map Module
         </xs:documentation>
            </xs:annotation>
        </xs:attributeGroup>
        <xs:attributeGroup ref="xhtml.input.ssimap.attlist">
            <xs:annotation>
                <xs:documentation>
            Redefinition by Server Side Image Map Module
```

```
          </xs:documentation>
             </xs:annotation>
          </xs:attributeGroup>
          <xs:attributeGroup ref="xhtml.input.events.attlist">
              <xs:annotation>
                  <xs:documentation>
             Redefinition by Event Attribute Module
           </xs:documentation>
              </xs:annotation>
          </xs:attributeGroup>
      </xs:attributeGroup>
      <xs:attributeGroup name="xhtml.label.attlist">
          <xs:attributeGroup ref="xhtml.label.attlist">
              <xs:annotation>
                  <xs:documentation>
              Original Label Attributes (in Forms Module)
           </xs:documentation>
              </xs:annotation>
          </xs:attributeGroup>
          <xs:attributeGroup ref="xhtml.label.events.attlist">
              <xs:annotation>
                  <xs:documentation>
             Redefinition by Event Attribute Module
           </xs:documentation>
              </xs:annotation>
          </xs:attributeGroup>
      </xs:attributeGroup>
      <xs:attributeGroup name="xhtml.select.attlist">
          <xs:attributeGroup ref="xhtml.select.attlist">
              <xs:annotation>
                  <xs:documentation>
              Original Select Attributes (in Forms Module)
           </xs:documentation>
              </xs:annotation>
          </xs:attributeGroup>
          <xs:attributeGroup ref="xhtml.select.events.attlist">
              <xs:annotation>
                  <xs:documentation>
             Redefinition by Event Attribute Module
           </xs:documentation>
              </xs:annotation>
          </xs:attributeGroup>
      </xs:attributeGroup>
      <xs:attributeGroup name="xhtml.textarea.attlist">
          <xs:attributeGroup ref="xhtml.textarea.attlist">
              <xs:annotation>
                  <xs:documentation>
              Original TextArea Attributes (in Forms Module)
           </xs:documentation>
              </xs:annotation>
          </xs:attributeGroup>
          <xs:attributeGroup ref="xhtml.textarea.events.attlist">
              <xs:annotation>
                  <xs:documentation>
             Redefinition by Event Attribute Module
           </xs:documentation>
              </xs:annotation>
          </xs:attributeGroup>
      </xs:attributeGroup>
      <xs:attributeGroup name="xhtml.button.attlist">
          <xs:attributeGroup ref="xhtml.button.attlist">
              <xs:annotation>
                  <xs:documentation>
              Original Button Attributes (in Forms Module)
           </xs:documentation>
              </xs:annotation>
          </xs:attributeGroup>
          <xs:attributeGroup ref="xhtml.button.events.attlist">
              <xs:annotation>
                  <xs:documentation>
             Redefinition by Event Attribute Module
           </xs:documentation>
              </xs:annotation>
          </xs:attributeGroup>
      </xs:attributeGroup>
  </xs:redefine>
  <xs:include schemaLocation="xhtml-ruby-1.xsd">
      <xs:annotation>
          <xs:documentation>
      Ruby module

      Elements defined here:
        * ruby, rbc, rtc, rb, rt, rp

      Note that either Ruby or Basic Ruby should be used but not both
    </xs:documentation>
          <xs:documentation source="http://www.w3.org/TR/2001/REC-ruby-20010531/#simple-ruby1"/>
      </xs:annotation>
  </xs:include>
  <xs:include schemaLocation="xhtml-events-1.xsd">
      <xs:annotation>
          <xs:documentation>
      XHTML Events Modules

      Attributes defined here:
        XHTML Event Types
```

```
      </xs:documentation>
          <xs:documentation source="http://www.w3.org/TR/xhtml-modularization/abstract_modules.html#s_intrinsiceventsmodule"/>
        </xs:annotation>
    </xs:include>
    <xs:include schemaLocation="xhtml-implements-1.xsd">
        <xs:annotation>
            <xs:documentation>
                XHTML Implements Attribute Module

                Attributes defined here:
                  implements
            </xs:documentation>
            <xs:documentation source="http://www.w3.org/TR/xhtml12/implements.html"/>
        </xs:annotation>
    </xs:include>
</xs:schema>
```

D.3. XHTML 1.2 Customizations

An XHTML Family Document Type (such as XHTML 1.2) must define the content model that it uses. This is done through a separate content model module that is instantiated by the XHTML Modular Framework. The content model module and the XHTML 1.2 Driver (above) work together to customize the module implementations to the document type's specific requirements. The content model module for XHTML 1.2 is defined below:

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema
    xmlns:xs="http://www.w3.org/2001/XMLSchema"
    xmlns:xh11d="http://www.w3.org/1999/xhtml/datatypes/"
    elementFormDefault="qualified" >
    <xs:import
        namespace="http://www.w3.org/1999/xhtml/datatypes/"
        schemaLocation="xhtml-datatypes-1.xsd"/>
    <xs:annotation>
        <xs:documentation>
            This is the XML Schema module of common content models for XHTML11

            $Id: xhtml12.ps,v 1.2 2008/12/23 21:35:02 smccarro Exp $
        </xs:documentation>
        <xs:documentation source="xhtml-copyright-1.xsd"/>
    </xs:annotation>
    <xs:annotation>
        <xs:documentation>
            XHTML Document Model
            This module describes the groupings of elements/attributes
            that make up common content models for XHTML elements.
            XHTML has following basic content models:
               xhtml.Inline.mix; character-level elements
               xhtml.Block.mix; block-like elements, e.g., paragraphs and lists
               xhtml.Flow.mix; any block or inline elements
               xhtml.HeadOpts.mix; Head Elements
               xhtml.InlinePre.mix; Special class for pre content model
               xhtml.InlineNoAnchor.mix; Content model for Anchor

            Any groups declared in this module may be used to create
            element content models, but the above are considered 'global'
            (insofar as that term applies here). XHTML has the
            following Attribute Groups
               xhtml.Core.extra.attrib
               xhtml.I18n.extra.attrib
               xhtml.Common.extra
```

```
        The above attribute Groups are considered Global
    </xs:documentation>
</xs:annotation>
<xs:attributeGroup
    name="xhtml.I18n.extra.attrib">
    <xs:annotation>
        <xs:documentation> Extended I18n attribute </xs:documentation>
    </xs:annotation>
    <xs:attributeGroup
        ref="xhtml.dir.attrib">
        <xs:annotation>
            <xs:documentation>
            "dir" Attribute from Bi Directional Text (bdo) Module
            </xs:documentation>
        </xs:annotation>
    </xs:attributeGroup>
</xs:attributeGroup>
<xs:attributeGroup
    name="xhtml.Common.extra">
    <xs:annotation>
        <xs:documentation> Extended Common Attributes </xs:documentation>
    </xs:annotation>
    <xs:attributeGroup
        ref="xhtml.style.attrib">
        <xs:annotation>
            <xs:documentation>
            "style" attribute from Inline Style Module
            </xs:documentation>
        </xs:annotation>
    </xs:attributeGroup>
    <xs:attributeGroup ref="xhtml.Events.attrib">
        <xs:annotation>
            <xs:documentation>
            Attributes from Events Module
            </xs:documentation>
        </xs:annotation>
    </xs:attributeGroup>
</xs:attributeGroup>
<xs:attributeGroup
    name="xhtml.Core.extra.attrib">
    <xs:annotation>
        <xs:documentation> Extend Core Attributes </xs:documentation>
    </xs:annotation>
</xs:attributeGroup>
<xs:attributeGroup
    name="xhtml.Global.core.extra.attrib">
    <xs:annotation>
        <xs:documentation> Extended Global Core Attributes </xs:documentation>
    </xs:annotation>
</xs:attributeGroup>
<xs:attributeGroup
    name="xhtml.Global.I18n.extra.attrib">
    <xs:annotation>
        <xs:documentation> Extended Global I18n attributes </xs:documentation>
    </xs:annotation>
</xs:attributeGroup>
```

```
<xs:attributeGroup
    name="xhtml.Global.Common.extra">
    <xs:annotation>
        <xs:documentation> Extended Global Common Attributes </xs:documentation>
    </xs:annotation>
</xs:attributeGroup>
<xs:group
    name="xhtml.Head.extra">
    <xs:sequence/>
</xs:group>
<xs:group
    name="xhtml.HeadOpts.mix">
    <xs:choice>
        <xs:element
            name="script"
            type="xhtml.script.type"/>
        <xs:element
            name="style"
            type="xhtml.style.type"/>
        <xs:element
            name="meta"
            type="xhtml.meta.type"/>
        <xs:element
            name="link"
            type="xhtml.link.type"/>
        <xs:element
            name="object"
            type="xhtml.object.type"/>
        <xs:group
            ref="xhtml.Head.extra"/>
    </xs:choice>
</xs:group>
<xs:group
    name="xhtml.head.content">
    <xs:sequence>
        <xs:group
            ref="xhtml.HeadOpts.mix"
            minOccurs="0"
            maxOccurs="unbounded"/>
        <xs:choice>
            <xs:sequence>
                <xs:element
                    name="title"
                    minOccurs="1"
                    maxOccurs="1"
                    type="xhtml.title.type"/>
                <xs:group
                    ref="xhtml.HeadOpts.mix"
                    minOccurs="0"
                    maxOccurs="unbounded"/>
                <xs:sequence
                    minOccurs="0">
                    <xs:element
                        name="base"
                        type="xhtml.base.type"/>
                    <xs:group
                        ref="xhtml.HeadOpts.mix"
```

```
                        minOccurs="0"
                        maxOccurs="unbounded"/>
                </xs:sequence>
            </xs:sequence>
            <xs:sequence>
                <xs:element
                    name="base"
                    type="xhtml.base.type"
                    minOccurs="1"
                    maxOccurs="1"/>
                <xs:group
                    ref="xhtml.HeadOpts.mix"
                    minOccurs="0"
                    maxOccurs="unbounded"/>
                <xs:element
                    name="title"
                    minOccurs="1"
                    maxOccurs="1"
                    type="xhtml.title.type"/>
                <xs:group
                    ref="xhtml.HeadOpts.mix"
                    minOccurs="0"
                    maxOccurs="unbounded"/>
            </xs:sequence>
        </xs:choice>
    </xs:sequence>
  </xs:group>
  <!--
  ins and del are used to denote editing changes
-->
  <xs:group
      name="xhtml.Edit.class">
      <xs:choice>
          <xs:element
              name="ins"
              type="xhtml.edit.type"/>
          <xs:element
              name="del"
              type="xhtml.edit.type"/>
      </xs:choice>
  </xs:group>
  <!--
  script and noscript are used to contain scripts
  and alternative content
-->
  <xs:group
      name="xhtml.Script.class">
      <xs:choice>
          <xs:element
              name="script"
              type="xhtml.script.type"/>
          <xs:element
              name="noscript"
              type="xhtml.noscript.type"/>
      </xs:choice>
  </xs:group>
  <xs:group
```

```
        name="xhtml.Misc.extra">
        <xs:sequence/>
    </xs:group>
    <!--
    These elements are neither block nor inline, and can
    essentially be used anywhere in the document body.
  -->
    <xs:group
        name="xhtml.Misc.class">
        <xs:choice>
            <xs:group
                ref="xhtml.Edit.class"/>
            <xs:group
                ref="xhtml.Script.class"/>
            <xs:group
                ref="xhtml.Misc.extra"/>
        </xs:choice>
    </xs:group>
    <!-- Inline Elements -->
    <xs:group
        name="xhtml.InlStruct.class">
        <xs:choice>
            <xs:element
                name="br"
                type="xhtml.br.type"/>
            <xs:element
                name="span"
                type="xhtml.span.type"/>
        </xs:choice>
    </xs:group>
    <xs:group
        name="xhtml.InlPhras.class">
        <xs:choice>
            <xs:element
                name="em"
                type="xhtml.em.type"/>
            <xs:element
                name="strong"
                type="xhtml.strong.type"/>
            <xs:element
                name="dfn"
                type="xhtml.dfn.type"/>
            <xs:element
                name="code"
                type="xhtml.code.type"/>
            <xs:element
                name="samp"
                type="xhtml.samp.type"/>
            <xs:element
                name="kbd"
                type="xhtml.kbd.type"/>
            <xs:element
                name="var"
                type="xhtml.var.type"/>
            <xs:element
                name="cite"
                type="xhtml.cite.type"/>
```

```
        <xs:element
            name="abbr"
            type="xhtml.abbr.type"/>
        <xs:element
            name="acronym"
            type="xhtml.acronym.type"/>
        <xs:element
            name="q"
            type="xhtml.q.type"/>
    </xs:choice>
</xs:group>
<xs:group
    name="xhtml.InlPres.class">
    <xs:choice>
        <xs:element
            name="tt"
            type="xhtml.InlPres.type"/>
        <xs:element
            name="i"
            type="xhtml.InlPres.type"/>
        <xs:element
            name="b"
            type="xhtml.InlPres.type"/>
        <xs:element
            name="big"
            type="xhtml.InlPres.type"/>
        <xs:element
            name="small"
            type="xhtml.InlPres.type"/>
        <xs:element
            name="sub"
            type="xhtml.InlPres.type"/>
        <xs:element
            name="sup"
            type="xhtml.InlPres.type"/>
    </xs:choice>
</xs:group>
<xs:group
    name="xhtml.I18n.class">
    <xs:sequence>
        <xs:element
            name="bdo"
            type="xhtml.bdo.type"/>
    </xs:sequence>
</xs:group>
<xs:group
    name="xhtml.Anchor.class">
    <xs:sequence>
        <xs:element
            name="a"
            type="xhtml.a.type"/>
    </xs:sequence>
</xs:group>
<xs:group
    name="xhtml.InlSpecial.class">
    <xs:choice>
        <xs:element
```

```
                name="img"
                type="xhtml.img.type"/>
            <xs:element
                name="map"
                type="xhtml.map.type"/>
            <xs:element
                name="object"
                type="xhtml.object.type"/>
        </xs:choice>
    </xs:group>
    <xs:group
        name="xhtml.InlForm.class">
        <xs:choice>
            <xs:element
                name="input"
                type="xhtml.input.type"/>
            <xs:element
                name="select"
                type="xhtml.select.type"/>
            <xs:element
                name="textarea"
                type="xhtml.textarea.type"/>
            <xs:element
                name="label"
                type="xhtml.label.type"/>
            <xs:element
                name="button"
                type="xhtml.button.type"/>
        </xs:choice>
    </xs:group>
    <xs:group
        name="xhtml.Inline.extra">
        <xs:sequence/>
    </xs:group>
    <xs:group
        name="xhtml.Ruby.class">
        <xs:sequence>
            <xs:element
                name="ruby"
                type="xhtml.ruby.type"/>
        </xs:sequence>
    </xs:group>
    <!--
    Inline.class includes all inline elements,
    used as a component in mixes
  -->
    <xs:group
        name="xhtml.Inline.class">
        <xs:choice>
            <xs:group
                ref="xhtml.InlStruct.class"/>
            <xs:group
                ref="xhtml.InlPhras.class"/>
            <xs:group
                ref="xhtml.InlPres.class"/>
            <xs:group
                ref="xhtml.I18n.class"/>
```

```
            <xs:group
                ref="xhtml.Anchor.class"/>
            <xs:group
                ref="xhtml.InlSpecial.class"/>
            <xs:group
                ref="xhtml.InlForm.class"/>
            <xs:group
                ref="xhtml.Ruby.class"/>
            <xs:group
                ref="xhtml.Inline.extra"/>
        </xs:choice>
    </xs:group>
    <!--
     InlNoRuby.class includes all inline elements
     except ruby
  -->
    <xs:group
        name="xhtml.InlNoRuby.class">
        <xs:choice>
            <xs:group
                ref="xhtml.InlStruct.class"/>
            <xs:group
                ref="xhtml.InlPhras.class"/>
            <xs:group
                ref="xhtml.InlPres.class"/>
            <xs:group
                ref="xhtml.I18n.class"/>
            <xs:group
                ref="xhtml.Anchor.class"/>
            <xs:group
                ref="xhtml.InlSpecial.class"/>
            <xs:group
                ref="xhtml.InlForm.class"/>
            <xs:group
                ref="xhtml.Inline.extra"/>
        </xs:choice>
    </xs:group>
    <!--
    InlinePre.mix
    Used as a component in pre model
  -->
    <xs:group
        name="xhtml.InlinePre.mix">
        <xs:choice>
            <xs:group
                ref="xhtml.InlStruct.class"/>
            <xs:group
                ref="xhtml.InlPhras.class"/>
            <xs:element
                name="tt"
                type="xhtml.InlPres.type"/>
            <xs:element
                name="i"
                type="xhtml.InlPres.type"/>
            <xs:element
                name="b"
                type="xhtml.InlPres.type"/>
```

```
            <xs:group
                ref="xhtml.I18n.class"/>
            <xs:group
                ref="xhtml.Anchor.class"/>
            <xs:group
                ref="xhtml.Misc.class"/>
            <xs:element
                name="map"
                type="xhtml.map.type"/>
            <xs:group
                ref="xhtml.Inline.extra"/>
        </xs:choice>
    </xs:group>
    <!--
    InlNoAnchor.class includes all non-anchor inlines,
    used as a component in mixes
  -->
    <xs:group
        name="xhtml.InlNoAnchor.class">
        <xs:choice>
            <xs:group
                ref="xhtml.InlStruct.class"/>
            <xs:group
                ref="xhtml.InlPhras.class"/>
            <xs:group
                ref="xhtml.InlPres.class"/>
            <xs:group
                ref="xhtml.I18n.class"/>
            <xs:group
                ref="xhtml.InlSpecial.class"/>
            <xs:group
                ref="xhtml.InlForm.class"/>
            <xs:group
                ref="xhtml.Ruby.class"/>
            <xs:group
                ref="xhtml.Inline.extra"/>
        </xs:choice>
    </xs:group>
    <!--
    InlNoAnchor.mix includes all non-anchor inlines
  -->
    <xs:group
        name="xhtml.InlNoAnchor.mix">
        <xs:choice>
            <xs:group
                ref="xhtml.InlNoAnchor.class"/>
            <xs:group
                ref="xhtml.Misc.class"/>
        </xs:choice>
    </xs:group>
    <!--
    Inline.mix includes all inline elements, including Misc.class
  -->
    <xs:group
        name="xhtml.Inline.mix">
        <xs:choice>
            <xs:group
```

```
                ref="xhtml.Inline.class"/>
            <xs:group
                ref="xhtml.Misc.class"/>
        </xs:choice>
    </xs:group>
    <!--
   InlNoRuby.mix includes all of inline.mix elements
   except ruby
  -->
    <xs:group
        name="xhtml.InlNoRuby.mix">
        <xs:choice>
            <xs:group
                ref="xhtml.InlNoRuby.class"/>
            <xs:group
                ref="xhtml.Misc.class"/>
        </xs:choice>
    </xs:group>
    <!--
    In the HTML 4 DTD, heading and list elements were included
    in the block group. The Heading.class and
    List.class groups must now be included explicitly
    on element declarations where desired.
  -->
    <xs:group
        name="xhtml.Heading.class">
        <xs:choice>
            <xs:element
                name="h1"
                type="xhtml.h1.type"/>
            <xs:element
                name="h2"
                type="xhtml.h2.type"/>
            <xs:element
                name="h3"
                type="xhtml.h3.type"/>
            <xs:element
                name="h4"
                type="xhtml.h4.type"/>
            <xs:element
                name="h5"
                type="xhtml.h5.type"/>
            <xs:element
                name="h6"
                type="xhtml.h6.type"/>
        </xs:choice>
    </xs:group>
    <xs:group
        name="xhtml.List.class">
        <xs:choice>
            <xs:element
                name="ul"
                type="xhtml.ul.type"/>
            <xs:element
                name="ol"
                type="xhtml.ol.type"/>
            <xs:element
```

```
            name="dl"
            type="xhtml.dl.type"/>
    </xs:choice>
</xs:group>
<xs:group
    name="xhtml.Table.class">
    <xs:choice>
        <xs:element
            name="table"
            type="xhtml.table.type"/>
    </xs:choice>
</xs:group>
<xs:group
    name="xhtml.Form.class">
    <xs:choice>
        <xs:element
            name="form"
            type="xhtml.form.type"/>
    </xs:choice>
</xs:group>
<xs:group
    name="xhtml.Fieldset.class">
    <xs:choice>
        <xs:element
            name="fieldset"
            type="xhtml.fieldset.type"/>
    </xs:choice>
</xs:group>
<xs:group
    name="xhtml.BlkStruct.class">
    <xs:choice>
        <xs:element
            name="p"
            type="xhtml.p.type"/>
        <xs:element
            name="div"
            type="xhtml.div.type"/>
    </xs:choice>
</xs:group>
<xs:group
    name="xhtml.BlkPhras.class">
    <xs:choice>
        <xs:element
            name="pre"
            type="xhtml.pre.type"/>
        <xs:element
            name="blockquote"
            type="xhtml.blockquote.type"/>
        <xs:element
            name="address"
            type="xhtml.address.type"/>
    </xs:choice>
</xs:group>
<xs:group
    name="xhtml.BlkPres.class">
    <xs:sequence>
        <xs:element
```

```
                name="hr"
                type="xhtml.hr.type"/>
        </xs:sequence>
    </xs:group>
    <xs:group
        name="xhtml.BlkSpecial.class">
        <xs:choice>
            <xs:group
                ref="xhtml.Table.class"/>
            <xs:group
                ref="xhtml.Form.class"/>
            <xs:group
                ref="xhtml.Fieldset.class"/>
        </xs:choice>
    </xs:group>
    <xs:group
        name="xhtml.Block.extra">
        <xs:sequence/>
    </xs:group>
    <!--
    Block.class includes all block elements,
    used as an component in mixes
  -->
    <xs:group
        name="xhtml.Block.class">
        <xs:choice>
            <xs:group
                ref="xhtml.BlkStruct.class"/>
            <xs:group
                ref="xhtml.BlkPhras.class"/>
            <xs:group
                ref="xhtml.BlkPres.class"/>
            <xs:group
                ref="xhtml.BlkSpecial.class"/>
            <xs:group
                ref="xhtml.Block.extra"/>
        </xs:choice>
    </xs:group>
    <!--
   Block.mix includes all block elements plus %Misc.class;
  -->
    <xs:group
        name="xhtml.Block.mix">
        <xs:choice>
            <xs:group
                ref="xhtml.Heading.class"/>
            <xs:group
                ref="xhtml.List.class"/>
            <xs:group
                ref="xhtml.Block.class"/>
            <xs:group
                ref="xhtml.Misc.class"/>
        </xs:choice>
    </xs:group>
    <!--
    All Content Elements
    Flow.mix includes all text content, block and inline
```

```
    Note that the "any" element included here allows us
    to add data from any other namespace, a necessity
    for compound document creation.
    Note however that it is not possible to add
    to any head level element without further
    modification. To add RDF metadata to the head
    of a document, modify the structure module.
  -->
    <xs:group
        name="xhtml.Flow.mix">
        <xs:choice>
            <xs:group
                ref="xhtml.Heading.class"/>
            <xs:group
                ref="xhtml.List.class"/>
            <xs:group
                ref="xhtml.Block.class"/>
            <xs:group
                ref="xhtml.Inline.class"/>
            <xs:group
                ref="xhtml.Misc.class"/>
        </xs:choice>
    </xs:group>
    <!--
    BlkNoForm.mix includes all non-form block elements,
    plus Misc.class
  -->
    <xs:group
        name="xhtml.BlkNoForm.mix">
        <xs:choice>
            <xs:group
                ref="xhtml.Heading.class"/>
            <xs:group
                ref="xhtml.List.class"/>
            <xs:group
                ref="xhtml.BlkStruct.class"/>
            <xs:group
                ref="xhtml.BlkPhras.class"/>
            <xs:group
                ref="xhtml.BlkPres.class"/>
            <xs:group
                ref="xhtml.Table.class"/>
            <xs:group
                ref="xhtml.Block.extra"/>
            <xs:group
                ref="xhtml.Misc.class"/>
        </xs:choice>
    </xs:group>
    <xs:element
        name="html"
        type="xhtml.html.type"/>
</xs:schema>
```

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema
 xmlns:xs="http://www.w3.org/2001/XMLSchema"
 elementFormDefault="qualified"
 xmlns:xh11d="http://www.w3.org/1999/xhtml/datatypes/"
>
    <xs:import namespace="http://www.w3.org/1999/xhtml/datatypes/"
```

```
            schemaLocation="xhtml-datatypes-1.xsd" />

    <xs:annotation>
        <xs:documentation>
      Client-side Image Maps
      This is the XML Schema Client-side Image Maps module for XHTML

        * area, map

      This module declares elements and attributes to support client-side
      image maps.

      $Id: xhtml12.ps,v 1.2 2008/12/23 21:35:02 smccarro Exp $
    </xs:documentation>
        <xs:documentation source="xhtml-copyright-1.xsd"/>
        <xs:documentation source="http://www.w3.org/TR/2001/REC-xhtml-modularization-20010410/abstract_modules.html#s_imapmodule"/>
    </xs:annotation>
    <xs:simpleType name="xhtml.Shape.Datatype">
        <xs:restriction base="xs:NMTOKEN">
            <xs:enumeration value="rect"/>
            <xs:enumeration value="circle"/>
            <xs:enumeration value="poly"/>
            <xs:enumeration value="default"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:simpleType name="xhtml.Coords.Datatype">
        <xs:restriction base="xh11d:Text"/>
    </xs:simpleType>
    <!-- modify anchor attribute definition list -->
    <xs:attributeGroup name="xhtml.a.csim.attlist">
        <xs:attribute name="shape" type="xhtml.Shape.Datatype" default="rect"/>
        <xs:attribute name="coords" type="xhtml.Coords.Datatype"/>
    </xs:attributeGroup>
    <!-- modify img attribute definition list -->
    <xs:attributeGroup name="xhtml.img.csim.attlist">
        <xs:attribute name="usemap" type="xh11d:URI"/>
    </xs:attributeGroup>
    <!-- modify form input attribute definition list -->
    <xs:attributeGroup name="xhtml.input.csim.attlist">
        <xs:attribute name="usemap" type="xh11d:URI"/>
    </xs:attributeGroup>
    <!-- modify object attribute definition list -->
    <xs:attributeGroup name="xhtml.object.csim.attlist">
        <xs:attribute name="usemap" type="xh11d:URI"/>
    </xs:attributeGroup>
    <xs:attributeGroup name="xhtml.area.attlist">
        <xs:attributeGroup ref="xhtml.Common.attrib"/>
        <xs:attribute name="href" type="xh11d:URI"/>
        <xs:attribute name="shape" type="xhtml.Shape.Datatype" default="rect"/>
        <xs:attribute name="coords" type="xhtml.Coords.Datatype"/>
        <xs:attribute name="nohref">
            <xs:simpleType>
                <xs:restriction base="xs:NMTOKEN">
                    <xs:enumeration value="nohref"/>
                </xs:restriction>
            </xs:simpleType>
        </xs:attribute>
        <xs:attribute name="alt" type="xh11d:Text" use="required"/>
        <xs:attribute name="tabindex" type="xh11d:Number"/>
        <xs:attribute name="accesskey" type="xh11d:Character"/>
    </xs:attributeGroup>
    <xs:group name="xhtml.area.content">
        <xs:sequence/>
    </xs:group>
    <xs:complexType name="xhtml.area.type">
        <xs:group ref="xhtml.area.content"/>
        <xs:attributeGroup ref="xhtml.area.attlist"/>
    </xs:complexType>
    <!-- map -->
    <xs:attributeGroup name="xhtml.map.attlist">
        <xs:attribute name="id" type="xs:ID" use="required"/>
        <xs:attributeGroup ref="xhtml.class"/>
        <xs:attributeGroup ref="xhtml.title"/>
        <xs:attributeGroup ref="xhtml.Core.extra.attrib"/>
        <xs:attributeGroup ref="xhtml.I18n.attrib"/>
    </xs:attributeGroup>
    <xs:group name="xhtml.map.content">
        <xs:sequence>
            <xs:choice maxOccurs="unbounded">
                <xs:group ref="xhtml.Block.mix"/>
                <xs:element name="area" type="xhtml.area.type"/>
            </xs:choice>
        </xs:sequence>
    </xs:group>
    <xs:complexType name="xhtml.map.type">
        <xs:group ref="xhtml.map.content"/>
        <xs:attributeGroup ref="xhtml.map.attlist"/>
    </xs:complexType>
</xs:schema>
```

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema
 xmlns:xs="http://www.w3.org/2001/XMLSchema"
 elementFormDefault="qualified"
 xmlns:xh11d="http://www.w3.org/1999/xhtml/datatypes/"
>
    <xs:import namespace="http://www.w3.org/1999/xhtml/datatypes/"
               schemaLocation="xhtml-datatypes-1.xsd" />
  <xs:annotation>
    <xs:documentation>
      This is the XML Schema Implements Attribute module for XHTML
      $Id: xhtml12.ps,v 1.2 2008/12/23 21:35:02 smccarro Exp $
    </xs:documentation>
    <xs:documentation source="xhtml-copyright-1.xsd"/>
  </xs:annotation>

  <xs:annotation>
    <xs:documentation>

        * implements

      This module declares the 'implements' attribute
    </xs:documentation>
    <xs:documentation source="http://www.w3.org/TR/xhtml12/implements.html"/>
  </xs:annotation>

  <xs:attributeGroup name="xhtml.script.implements.attlist">
    <xs:attribute name="implements" type="xh11d:URIorSafeCURIEs"/>
  </xs:attributeGroup>

</xs:schema>
```

D.4. XML Schema Ruby Implementation

The RUBY specification does not currently define an XHTML Module using XML Schema. One is provided in [XHTML11 [p.15]].

E. Client-side Image Map

This appendix is *normative*.

The Client-side Image Map Module provides elements for client side image maps. It requires that the Image Module (or another module that supports the `img` element) be included. The Client-side Image Map Module supports the following elements:

Elements	Attributes	Minimal Content Model
a&	coords (CDATA), shape ("rect" | "circle" | "poly" | "default")	n/a
area	Common [p.??] , accesskey (Character), alt* (Text), coords (CDATA), href (URI), nohref ("nohref"), shape ("rect"* | "circle" | "poly" | "default"), tabindex (Number)	EMPTY
img&	usemap (URI)	n/a
input&	usemap (URI)	Note: Only when the Forms or Basic Forms module is included
map	I18N [p.??] , Events [p.??] , class (NMTOKEN), id* (ID), title (CDATA)	((Heading | Block) | area)+
object&	usemap (URI)	Note: Only when the object module is included

When this module is used, the `map` element is added to the Inline content set of the Text Module.

Implementations: DTD, XML Schema

F. Implements Attribute Module

This appendix is *normative*.

The Implements Attribute Module defines the `implements` attribute and adds it to the `script` element.

The Implements Attribute Module supports the following element:

Elements	Attributes
script&	implements (`URIorSafeCURIEs`)

The optional `implements` attribute indicates that the script provides an implementation of the feature or features identified via this attribute. The script should only be loaded and used if the user agent does not have an implementation of the specified feature.

Implementations: DTD, XML Schema

G. Acknowledgements

This appendix is *informative*.

This specification was prepared by the W3C HTML Working Group. The members at the time of publication of the first edition were:

- Steven Pemberton, CWI (HTML Working Group Chair)
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