



XHTML Mobile Profile

Version 29-Oct-2001

Wireless Application Protocol
WAP-277-XHTMLMP-20011029-a

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Document History	
WAP-277-XHTMLMP-20011029-a	Current
WAP-277-XHTMLMP-20011029-a	Proposed

Contents

1. SCOPE	4
2. REFERENCES	5
2.1. NORMATIVE REFERENCES	5
2.2. INFORMATIVE REFERENCES	5
3. TERMINOLOGY AND CONVENTIONS	6
3.1. CONVENTIONS	6
3.2. DEFINITIONS	6
3.3. ABBREVIATIONS	6
4. INTRODUCTION	7
5. THE XHTML MOBILE PROFILE DOCUMENT TYPE	8
6. USE OF XHTML MOBILE PROFILE	10
7. CONFORMANCE	11
7.1. DOCUMENT CONFORMANCE	11
7.2. USER AGENT CONFORMANCE	11
8. USE OF STYLE SHEETS WITH XHTML MOBILE PROFILE	12
8.1. ADDING STYLE TO XHTML MOBILE PROFILE DOCUMENTS	12
8.1.1. External Style Sheets	12
8.1.2. Internal Style Sheets	12
8.1.3. Inline Style	13
APPENDIX A. XHTML MOBILE PROFILE DOCUMENT TYPE DEFINITION (NORMATIVE)	14
APPENDIX B. STATIC CONFORMANCE REQUIREMENTS (NORMATIVE)	15
APPENDIX C. CHANGE HISTORY (INFORMATIVE)	17

1. Scope

Wireless Application Protocol (WAP) is a result of continuous work to define an industry-wide specification for developing applications that operate over wireless communication networks. The scope for the WAP Forum is to define a set of specifications to be used by service applications. The wireless market is growing very quickly and reaching new customers and services. To enable operators and manufacturers to meet the challenges in advanced services, differentiation, and fast/flexible service creation, WAP defines a set of protocols in transport, session, and application layers. For additional information on the WAP architecture, refer to [WAPARCH].

This specification defines an XHTML document type based upon the module framework and the modules defined by Modularization of XHTML [XHTMLMod]. This document type is called XHTML Mobile Profile and is designed for resource-constrained Web clients that do not support the full set of XHTML features, such as mobile phones, PDAs, pagers and set-top boxes. It extends XHTML Basic with modules, elements and attributes to provide a richer authoring language.

2. References

2.1. Normative References

- [CREQ] “Specification of WAP Conformance Requirements”, WAP Forum™, WAP-221-CREQ-20010425-a. [URL:http://www.wapforum.org/](http://www.wapforum.org/)
- [RFC2119] “Key words for use in RFCs to Indicate Requirement Levels”, S. Bradner, March 1997. [URL:http://www.ietf.org/rfc/rfc2119.txt](http://www.ietf.org/rfc/rfc2119.txt)
- [WCSS] “WAP CSS Specification”, WAP Forum™, WAP-239-WCSS. [URL:http://www.wapforum.org/](http://www.wapforum.org/)
- [XHTMLBasic] “XHTML™ Basic”, W3C Recommendation 19 December 2000, Mark Baker et al., editors. [URL:http://www.w3.org/TR/2000/REC-xhtml-basic-20001219](http://www.w3.org/TR/2000/REC-xhtml-basic-20001219)
- [XHTMLMod] “Modularization of XHTML™”, W3C Recommendation 10 April 2001, M. Altheim et al., editors. [URL:http://www.w3.org/TR/2001/REC-xhtml-modularization-20010410](http://www.w3.org/TR/2001/REC-xhtml-modularization-20010410)

2.2. Informative References

- [WAE] “Wireless Application Environment Specification”, WAP Forum™, WAP-236-WAE. [URL:http://www.wapforum.org/](http://www.wapforum.org/)
- [WAPARCH] “WAP Architecture”, WAP Forum™, WAP-210-WAPArch. [URL:http://www.wapforum.org/](http://www.wapforum.org/)

3. Terminology and Conventions

3.1. Conventions

The key words “MUST”, “MUST NOT”, “REQUIRED”, “SHALL”, “SHALL NOT”, “SHOULD”, “SHOULD NOT”, “RECOMMENDED”, “MAY”, and “OPTIONAL” in this document are to be interpreted as described in [RFC2119].

All sections and appendixes, except “Scope” and “Introduction”, are normative, unless they are explicitly indicated to be informative.

3.2. Definitions

User – person who interacts with a user agent to view, hear or otherwise use a resource

User Agent – any software or device that interprets XHTML Mobile Profile documents and other resources on behalf of the user

3.3. Abbreviations

CSS	Cascading Style Sheets
DTD	Document Type Definition
PDA	Personal Digital Assistant
WAP	Wireless Application Protocol
XHTML	Extensible HyperText Markup Language
XML	Extensible Markup Language

4. Introduction

The motivation for the XHTML Mobile Profile document type is to provide an authoring language based upon XHTML that addressed the special requirements of Web clients operating on resource-constrained devices such as mobile phones.

The XHTML Mobile Profile is a strict subset of XHTML. It extends XHTML Basic to bring enhanced functionality to application authors, including additional presentation elements and support for internal style sheets.

5. The XHTML Mobile Profile Document Type

The XHTML Mobile Profile document type is an XHTML document type based upon the module framework and the modules defined by [XHTMLMod].

The XHTML Mobile Profile document type is defined as a strict superset of [XHTMLBasic]. XHTML Mobile Profile consists of the XHTML modules specified in this section. All XHTML modules are defined in [XHTMLMod].

XHTML Basic

Module	Element
Structure	body, head, html, title
Text	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	a
List	dl, dt, dd, ol, ul, li
Basic Forms	form, input, label, select, option, textarea
Basic Tables	caption, table, td, th, tr
Image	img
Object	object, param
Metainformation	meta
Link	link
Base	base

Additional XHTML Modules

Module	Elements/Attributes
Forms (<i>partial</i>)	fieldset, optgroup
Legacy (<i>partial</i>)	start attribute on ol, value attribute on li
Presentation (<i>partial</i>)	b, big, hr, i, small
Style Sheet	style element
Style Attribute	style attribute

For modules marked as *partial* above, the module was not included in its entirety (only selected elements were included). The implication of this is that the XHTML Mobile Profile document type is not strictly *XHTML Host Language Conforming*, as defined in [[XHTMLMod]].

An implementation of this document type as an XML 1.0 DTD is available in Appendix A.

The elements, attributes and minimum content models associated with these modules are defined in [XHTMLMod]. The elements are listed here for informative purposes, but the definitions in [XHTMLMod] should be considered normative. In some cases, the minimum content models have been extended. The DTD found in Appendix A should be consulted for more information.

6. Use of XHTML Mobile Profile

The XHTML Mobile Profile document type serves as an authoring language for content targeted at resource-constrained devices. It is expected that it can be used as it is for this purpose.

The XHTML Mobile Profile document type could also serve as a host language, that is, a language containing a mix of vocabularies within one document type. Those considering its use as a host language should consider that it is not strictly XHTML Host Language Conforming, as it only partially includes three modules.

7. Conformance

7.1. Document Conformance

A conforming XHTML Mobile Profile document is a document that requires only the facilities described as mandatory in this specification. A conforming document **MUST** meet all of the following criteria:

1. The document **MUST** conform to the constraints expressed in Appendix A.
2. The root element of the document **MUST** be `html`.
3. The name of the default namespace on the root element **MUST** be the XHTML namespace name, <http://www.w3.org/1999/xhtml>.
4. There **MUST** be a DOCTYPE declaration in the document prior to the root element, with a public identifier. The public identifier included in the DOCTYPE declaration must reference the DTD found in Appendix A using its Formal Public Identifier. The system identifier may be modified appropriately. For example,

```
<!DOCTYPE html PUBLIC "-//WAPFORUM//DTD XHTML Mobile 1.0//EN"
    "http://www.wapforum.org/DTD/xhtml-mobile10.dtd">
```

5. The DTD internal subset **MUST NOT** be used to override any parameter entities in the DTD.

A document that meets all of these criteria is positively identified as an XHTML Mobile Profile document. For user agents that do not validate documents according to the DTD, a document can be identified as XHTML Mobile Profile by detecting a properly formatted DOCTYPE declaration as specified above.

7.2. User Agent Conformance

A conforming user agent **MUST** meet all the user agent conformance requirements defined in [XHTMLMod].

The MIME media type for XHTML Mobile Profile is “application/vnd.wap.xhtml+xml”.

A conforming user agent **MUST** accept XHTML Mobile Profile documents identified as “application/vnd.wap.xhtml+xml”. A conforming user agent **SHOULD** accept XHTML Mobile Profile documents identified as “application/xhtml+xml”.

Note that there is no requirement that XHTML Mobile Profile documents be given the media type “application/vnd.wap.xhtml+xml”; the media type “text/html” may be used instead. As there are no conformance rules for documents with type “text/html”, there is no easy way to determine which documents of type “text/html” are XHTML Mobile Profile documents, except that the document may include the DOCTYPE declaration specified in section 7.1. A conforming user agent **SHOULD** also accept XHTML Mobile Profile documents identified with type “text/html”.

When declaring support for XHTML Mobile Profile, a conforming user agent **MUST** use an `Accept` header with value `application/xhtml+xml; profile="http://www.wapforum.org/xhtml"` and an `Accept` header with value `application/vnd.wap.xhtml+xml`.

Additional user agent conformance requirements are defined in [WAE]. To fully understand and implement a conforming WAE user agent, this specification must be considered in conjunction with [WAE].

8. Use of Style Sheets with XHTML Mobile Profile

Style sheets can be used to style XHTML Mobile Profile documents. If a WAE user agent supports styling of documents with style sheets, it **MUST** support the style language WAP CSS [WCSS], a subset of CSS2 with WAP-specific extensions. A user agent **MAY** support other style languages.

8.1. Adding Style to XHTML Mobile Profile Documents

Style information can be associated with a document in three ways:

- External style sheet
- Internal style information
- Inline style information

8.1.1. External Style Sheets

An external style sheet can be associated with a document using a special XML processing instruction or the `link` element.

The use of the XML processing instruction is specified in [WCSS]. In the following example, the XML processing instruction is used to associate the external style sheet "mobile.css":

```
<?xml-stylesheet href="mobile.css" media="handheld" type="text/css" ?>
```

The use of the `link` element is specified by [XHTMLMod]. To link an external style sheet to a document using the `link` element, certain values for the `ref` attribute are specified: `ref="stylesheet"` or `ref="alternate stylesheet"`. In either case, the `type` attribute specifies the style sheet language.

For `type="text/css"`, the user agent **MUST** process the style sheet according to the style language WAP CSS [WCSS].

In the following example, the `link` element is used to associate the external style sheet "mystyle.css":

```
<html>
  <head>
    <link href="mystyle.css" type="text/css" rel="stylesheet" />
    ...
  </head>
  ...
</html>
```

8.1.2. Internal Style Sheets

Style information can be located within the document using the `style` element. This element, like `link`, must be located in the document header. The `style` element has the `type` attribute that specifies the style sheet language.

The following shows an example of an internal style sheet:

```
<html>
  <head>
    <style type="text/css">
      p { text-align: center; }
    </style>
  </head>
  ...
</html>
```

```
    </style>
    ...
</head>
...
</html>
```

For `type="text/css"`, the user agent **MUST** process the style sheet according to the style language WAP CSS [WCSS].

User agents that don't support style sheets, or don't support the specific style sheet language used by a `style` element, **MUST** hide the content of the `style` element.

8.1.3. Inline Style

An author can specify style information for a single element using the `style` attribute. This is called inline style. The `style` attribute is part of the Core attribute set and is therefore available on every element in XHTML Mobile Profile. The default style language for style information in the `style` attribute is WAP CSS [WCSS].

In the following example, inline styling information is applied to a specific paragraph element:

```
<p style="text-align: center">...</p>
```

Note that not all styling rules apply to all elements, and some elements are completely unaffected by styling rules. See [WCSS] for details.

Appendix A. XHTML Mobile Profile Document Type Definition (Normative)

See <http://www.wapforum.org/DTD/xhtml-mobile10.zip> for the ZIP archive of the DTD for XHTML Mobile Profile 1.0. It includes the DTD driver file (xhtml-mobile10.dtd) and a “flat” version of the DTD (xhtml-mobile10-flat.dtd).

See <http://www.wapforum.org/DTD/xhtml-mobile10-flat.dtd> for the “flat” version of the DTD for XHTML Mobile Profile 1.0.

See <http://www.wapforum.org/DTD/xhtml-mobile10.dtd> for the driver file for the XHTML Mobile Profile 1.0 DTD. This file depends on the XHTML module implementations defined in [XHTMLMod].

Appendix B. Static Conformance Requirements (Normative)

The notation used in this appendix is specified in [CREQ].

XHTML Basic Modules

Item	Function	Reference	Status	Requirement
XHTMLMP-XHTMLMOD-C-001	XHTML Structure module	5	M	
XHTMLMP-XHTMLMOD-C-002	XHTML Text module	5	M	
XHTMLMP-XHTMLMOD-C-003	XHTML Hypertext module	5	M	
XHTMLMP-XHTMLMOD-C-004	XHTML List module	5	M	
XHTMLMP-XHTMLMOD-C-005	XHTML Basic Forms module	5	M	
XHTMLMP-XHTMLMOD-C-006	XHTML Basic Tables module	5	M	
XHTMLMP-XHTMLMOD-C-007	XHTML Image module	5	M	
XHTMLMP-XHTMLMOD-C-008	XHTML Object module	5	M	
XHTMLMP-XHTMLMOD-C-009	XHTML Metainformation module	5	M	
XHTMLMP-XHTMLMOD-C-010	XHTML Link module	5	M	
XHTMLMP-XHTMLMOD-C-011	XHTML Base module	5	M	

Other XHTML Modules

Item	Function	Reference	Status	Requirement
XHTMLMP-XHTMLMOD-C-012	XHTML Style Sheet module	5	M	
XHTMLMP-XHTMLMOD-C-013	XHTML Style Attribute module	5	M	

Other XHTML Elements and Attributes

Item	Function	Reference	Status	Requirement
XHTMLMP-XHTMLMOD-C-014	fieldset element in Forms module	5	M	
XHTMLMP-XHTMLMOD-C-015	optgroup element in Forms module	5	M	
XHTMLMP-XHTMLMOD-C-016	start attribute on ol	5	M	
XHTMLMP-XHTMLMOD-C-017	value attribute on li	5	M	
XHTMLMP-XHTMLMOD-C-018	b element in Presentation module	5	M	

Item	Function	Reference	Status	Requirement
XHTMLMP-XHTMLMOD-C-019	big element in Presentation module	5	M	
XHTMLMP-XHTMLMOD-C-020	hr element in Presentation module	5	M	
XHTMLMP-XHTMLMOD-C-021	i element in Presentation module	5	M	
XHTMLMP-XHTMLMOD-C-022	small element in Presentation module	5	M	

XHTML User Agent Conformance

Item	Function	Reference	Status	Requirement
XHTMLMP-XHTMLUA-C-001	“Modularization of XHTML” conformance requirements	7.2	M	

Document Types

Item	Function	Reference	Status	Requirement
XHTMLMP-DOC-C-001	Accept XHTML Mobile Profile documents	7.2	M	
XHTMLMP-DOC-C-002	Advertise support for XHTML Mobile Profile documents	7.2	M	

Style Sheets

Item	Function	Reference	Status	Requirement
XHTMLMP-STYLE-C-001	Support for WAP CSS	8	O	WCSS:MCF AND XHTMLMP-STYLE-C-002 AND XHTMLMP-STYLE-C-003 AND XHTMLMP-STYLE-C-004
XHTMLMP-STYLE-C-002	Handling of type “text/css” for external style sheet	8.1.1	O	
XHTMLMP-STYLE-C-003	Handling of type “text/css” for internal style sheet	8.1.2	O	
XHTMLMP-STYLE-C-004	Default type “text/css” for inline style rules	8.1.3	O	

Appendix C. Change History (Informative)

Type of Change	Date	Section	Description
Class 0	11-October-2001		The initial version of this document.
Draft	24-October-2001	5	Added text to indicate use of XHTML modularization.
Draft	29-October-2001	5	Added text to explain the document type is not strictly "XHTML Host Language Conforming".
Draft	29-October-2001	6	Added section entitled "Use of XHTML Mobile Profile".
Draft	29-October-2001	Appendix B	Added "WCSS:MCF" to "Support for WAP CSS".