# Browsing 2.4 Requirements

Approved Version 2.4 –29 Mar 2011

**Open Mobile Alliance**

OMA-RD-Browsing-V2_4-20110329-A

# Contents

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# 1. Scope (Informative)

This document defines the requirements for the second phase of the Browsing Enhancements work item.

It addresses the requirements to enhance HTTP-based XHTML and other XML application user agents to meet the current market requirements like converged standards, composite document handling, enhanced security, and easy integration of applications.

It will include convergence in XHTML Mobile Profile, WCSS, restructuring of WAEspec for integration usability, and rich dynamic media support (e.g. RME).

# 2. References

## 2.1 Normative References


**[XHTMLBASIC11]** "XHTML Basic, Version 1.1", W3C Candidate Recommendation 13 July 2006
http://www.w3.org/TR/2007/CR-xhtml-basic-20070713

**[CSSMP20]** "CSS Mobile Profile, Version 2.0", W3C Working Draft 8 December 2006
http://www.w3.org/TR/2006/WD-css-mobile-20061208

**[SVGT12]** "SVG Tiny, Version 1.2", W3C Candidate Recommendation *10 August 2006*
http://www.w3.org/TR/2006/CR-SVGMobile12-20060810/

**[XHTMLMOD10]** "Modularization of XHTML™", W3C Recommendation 10 April 2001.
URL: http://www.w3.org/TR/xhtml-modularization/

**[RME-RD]** "Rich Media Environment Requirements", , Open Mobile Alliance™, OMA-RD_Rich-Media-Environment-V1_0, URL:http//www.openmobilealliance.org/

**[WAEspec23]** "Wireless Application Environment Specification", Open Mobile Alliance, Open Mobile Alliance™, OMA-WAP-TS-WAEspec_V2_3, , URL:http//www.openmobilealliance.org/


## 2.2 Informative References


**[BrowsingEnhancement PhaseOne]** "Browsing Enhancement PhaseOne version 1.0", Open Mobile Alliance™, OMA-RD_BrowsingEnhancementsOne-V1_0, URL: http://www.openmobilealliance.org/

**[XHTMLMP12]** "XHTML Mobile Profile, Version 1.2", Open Mobile Alliance™, OMA-TS-XHTMLMP-V1_2,
URL: http://www.openmobilealliance.org/

**[WCSS11]** "Wireless Cascading Style Sheets version 1.1", Open Mobile Alliance™, OMA-WAP-WCSS-V1_1,
URL: http://www.openmobilealliance.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.

This is an informative document, which is not intended to provide testable requirements to implementations.

## 3.2 Definitions

None.

## 3.3 Abbreviations

| | |
|---|---|
| **OMA** | Open Mobile Alliance |
| **W3C** | World Wide Web Consortium |
| **XHTML** | Extensible Hyper Text Markup Language |
| **XHTMLMP** | XHTML Mobile Profile |

# 4. Introduction (Informative)

Browsing Enhancements is a general work item for new browser capabilities. The proposed enhancements in the second phase are the result of proposals from member companies to provide convergence to single standards in the mobile market and enhance usability and interoperability for browsing.

The areas being addressed by phase two are:

- **Convergence**: Convergence to XHTML Basic 1.1, CSS Mobile Profile2.0, and XHTML Modularization 1.1.
- **Integrability**: Restructuring of WAEspec to enable easy reuse of technology components in other OMA enablers.
- **Rich and Dynamic Content**: RME

## 4.1 Previous Versions

The RD of the previous Browsing releases until 2.3 is covered by [BrowsingEnhacementPhaseOne].

## 4.2 Version 2.4

This RD is the final RD for WID0022 Browsing Enhancements. This completes the work related to the WID0022. Therefore, this RD defines the "end of road" in the Browsing Enhancements roadmap. This work item realized addition of mandatory CSS properties, addition of market-driven browser conformances for interoperability, addition of mandatory UAProf and other minor enhancements with Browsing 2.2, and 2.3 enablers. This RD will lead to the Browsing 2.4 Enabler release, which will be the final release of Browsing 2.x series Enablers.

WID 0022 described browsing enhancement, which is wide open definition, but the enhancements expected at defining WID 0022 are achieved with this RD and it reaches the end of road.

Any further work on enhancing browsing features will be covered by the new work items if required.

# 5. Use Cases (Informative)

## 5.1 Convergence to W3C Standards

### 5.1.1 Short Description

In Markup languages, style sheet languages, scripting languages and their binding to DOM and other host object APIs, it is desirable that the OMA Enabler standards and W3C standards maintain the maximum identicalness in syntax level.

### 5.1.2 Actors

- Content authors: people to author the content to be delivered to the end users
- User Agent Implementers: people to implement the user agent behaviors.

#### 5.1.2.1 Actor Specific Issues

Nothing.

#### 5.1.2.2 Actor Specific Benefits

- Content author benefits: They can depend on the single standard for syntactic matters to create contents for markup language, style sheet language, scripting language, APIs for host objects.
- User Agent implementers: They can depend on the single standard for syntactic matters to implement user agents for markup language, style sheet language, scripting language, APIs for host objects.

### 5.1.3 Pre-conditions

The external standards (e.g. W3C) should be stable.

### 5.1.4 Post-conditions

Nothing applicable.

### 5.1.5 Normal Flow

1. Jim, a content author in a content provider company, creates a content based on W3C standards, W3c-based markup language for the mobile Internet, stylesheet language for the mobile Internet, scripting language and its binding for the mobile Internet.
2. Nancy, an end user using a user agent based on the OMA enabler standards, request a content created by Jim
3. The content is downloaded to the Nancy's handset, and the user agent in the handset satisfactorily renders and interacts with Nancy.

### 5.1.6 Alternative Flow

1. Jim, a content author in a content provider company, creates a content based on OMA standards, OMA-based markup language for the mobile Internet, stylesheet language for the mobile Internet, scripting language and its binding for the mobile Internet.
2. Nancy, an end user using a user agent based on the W3C enabler standards, request a content created by Tom
3. The content is downloaded to the Nancy's handset, and the user agent in the handset satisfactorily renders and interacts with Nancy.

### 5.1.7 Operational and Quality of Experience Requirements

Nothing applicable.

## 5.2 Integrate-ability

### 5.2.1 Short Description

The mark up languages, stylesheet languages, scripting languages, host object APIs should provide an easy reuse in different OMA enablers.

### 5.2.2 Actors

- Content authors: people to author the content to be delivered to the end users
- User Agent Implementers: people to implement the user agent behaviors.

#### 5.2.2.1 Actor Specific Issues

Nothing.

#### 5.2.2.2 Actor Specific Benefits

- Content author benefits: They can depend on the single standard for syntactic matters to create contents for markup language, style sheet language, scripting language, APIs for host objects.
- User Agent implementers: They can depend on the single standard for syntactic matters to implement user agents for markup language, style sheet language, scripting language, APIs for host objects.

### 5.2.3 Pre-conditions

The external standards (e.g. W3C) should be stable.

### 5.2.4 Post-conditions

Nothing applicable.

### 5.2.5 Normal Flow

1. Kaz, a user agent implementer, creates a new communication service based on OMA enablers. Kaz wants to realize a simple user-to-user communication, but with colourful styling.
2. Kaz refers to the Browsing enabler just for rendering text with color.
3. Kaz implements his application using the reusable component of Browsing enablers.
4. Nancy, a user of Kaz's communication application uses its commutation facility with Keith.
5. Nancy and Keith users this commutation service with the minimum overhead footprint in their handsets with the reuse of the Browsing enablers.

**[Multiple Delivery Contexts Case]**

1. Jim, a content author in a content provider, would like to delivery his authored content using HTTP, digital broadcast, and off-line portable memory card.
2. Nancy, a end user received Jim's content by multiple delivery contexts (HTTP, digital broadcast, and offline portable memory card)
3. Nancy enjoys the content at her handset

### 5.2.6 Alternative Flow

Not applicable.

### 5.2.7 Operational and Quality of Experience Requirements

Nothing applicable.

## 5.3 Rich Media Use

### 5.3.1 Short Description

The mark up language enabler needs to provide an easy integration of rich media environment [RME-RD] with additional scene management facilities in the scripting environment.

### 5.3.2 Actors

- Content authors: people to author the content to be delivered to the end users
- User Agent Implementers: people to implement the user agent behaviors.
- Users: people to download the rich media content and interact with it.

#### 5.3.2.1 Actor Specific Issues

Nothing.

#### 5.3.2.2 Actor Specific Benefits

- Content author benefits: They can use mark up, styling and scripting capability to add the detailed rich media experience for end users .
- User Agent implementers: They can depend on the single standard for syntactic matters to implement user agents for markup language, style sheet language, scripting language, APIs for host objects to enable the rich media applications.
- Users: They can enjoy the rich media applications using the standardized API for host object manipulation.

### 5.3.3 Pre-conditions

Nothing applicable.

### 5.3.4 Post-conditions

Nothing applicable.

### 5.3.5 Normal Flow

1. Jim, a content author in a content provider company, creates a rich media content based on markup languages, scripting language and style sheet languages to add fine detailed processing of rich media applications to manipulate the rich media scene updates.
2. Nancy, an end user using a user agent based on the OMA enabler standards, request a content created by Jim
3. The content is downloaded to the Nancy's handset, and the user agent in the handset satisfactorily renders and interacts with Nancy with the enhanced scene updates for rich media applications..

### 5.3.6 Operational and Quality of Experience Requirements

Nothing applicable.

# 6. Requirements (Normative)

## 6.1 High-Level Functional Requirements

| Label | Description | Enabler Release |
|---|---|---|
| BRO24-FUNC-001 | The Browsing Enabler SHALL provide convergence in content markup (e.g. markup languages) to W3C standards [XHTMLBASIC11] [XHTMLMOD10] | Browsing 2.4 |
| BRO24-FUNC-002 | The Browsing Enabler SHALL provide convergence in styling (e.g. stylesheet languages) to W3C standards [CSSMP20]. | Browsing 2.4 |
| BRO24-FUNC-003 | The Browsing Enabler SHALL provide convergence in scripting (e.g. scripting languages) for RME functionalities to W3C standards [SVGT12]. | Browsing 2.4 |
| BRO24-FUNC-004 | The Browsing enabler SHOULD provide easy re-use of Browsing components in browsing environment and other OMA Enablers (embedded or standalone use of component technology) | Browsing 2.4 |
| BRO24-FUNC-005 | The Browsing Enabler SHALL provide underlying functionalities required by RME Enabler [RME-RD] . | Browsing 2.4 |

**Table 1: High-Level Functional Requirements**

### 6.1.1 Security

Note: No new security requirements in security.

| Label | Description | Enabler Release |
|---|---|---|
| | | |
| | | |
| | | |

**Table 2: High-Level Functional Requirements – Security Items**

#### 6.1.1.1 Authentication

Note: No new requirements in Authentication.

| Label | Description | Enabler Release |
|---|---|---|
| | | |
| | | |

**Table 3: High-Level Functional Requirements – Authentication Items**

#### 6.1.1.2 Authorization

Note: No new requirements in Authorization.

| Label | Description | Enabler Release |
|---|---|---|
| | | |
| | | |

**Table 4: High-Level Functional Requirements – Authorization Items**

#### 6.1.1.3 Data Integrity

Note: No new requirements in Data Integrity.

| Label | Description | Enabler Release |
|---|---|---|
| | | |
| | | |

**Table 5: High-Level Functional Requirements – Data Integrity Items**

#### 6.1.1.4 Confidentiality

Note: No new requirements in Confidentiality.

| Label | Description | Enabler Release |
|---|---|---|
| | | |
| | | |

**Table 6: High-Level Functional Requirements – Confidentiality Items**

### 6.1.2 Charging

Note: No new requirements in Charging.

| Label | Description | Enabler Release |
|---|---|---|
| | | |
| | | |
| | | |

**Table 7: High-Level Functional Requirements – Charging Items**

### 6.1.3 Administration and Configuration

Note: No new requirements in Administration and Configuration.

| Label | Description | Enabler Release |
|---|---|---|
| | | |
| | | |
| | | |

**Table 8: High-Level Functional Requirements – Administration and Configuration Items**

### 6.1.4 Usability

Note: No new requirements in Usability.

| Label | Description | Enabler Release |
|---|---|---|
| | | |
| | | |
| | | |

**Table 9: High-Level Functional Requirements – Usability Items**

### 6.1.5 Interoperability

| Label | Description | Enabler Release |
|---|---|---|
| BRO24-INT-001 | The Enabelr SHALL support the identical DTD with W3C XHTML Basic 1.1 [XHTMLBASIC11]. | Browsing 2.4 |
| BRO24-INT-002 | The Enabler SHALL support the identical CSS properties with W3C CSS Mobile Profile 2.0[CSSMP20] | Browsing 2.4 |
| BRO24-INT-003 | The Enabler SHALL support SVGT 1.2 uDOM [SVGT12] | Browsing 2.4 |
| BRO24-INT-004 | The Enabler SHALL support backward compatibility with Browsing 2.3 [WAEspec23] | Browsing 2.4 |

**Table 10: High-Level Functional Requirements – Interoperability Items**

### 6.1.6 Privacy

Note: No new requirements in Privacy.

| Label | Description | Enabler Release |
|---|---|---|
| | | |
| | | |
| | | |

**Table 11: High-Level Functional Requirements – Privacy Items**

## 6.2 Overall System Requirements

Note: No new requirements in Overall System Requirements.

| Label | Description | Enabler Release |
|---|---|---|
| | | |
| | | |
| | | |

**Table 12: High-Level System Requirements**

# Appendix A. Change History (Informative)

## A.1 Approved Version History

| Reference | Date | Description |
|---|---|---|
| OMA-RD-Browsing-V2_4-20110329-A | 29 Mar 2011 | Status changed to Approved by TP:<br>OMA-TP-2011-0097-INP_Browsing_V2_4_ERP_for_Final_Approval |