Enabler Validation Plan for Browsing 2.4

Candidate Version 2.4 – 23 March 2010

Open Mobile Alliance

OMA-EVP- Browsing-V2_4-20100323-C

Contents

Figures

Tables

1. Scope

This document details the Validation plan for the Browsing 2.4 Enabler Release. The successful accomplishment of the validation activities will be required for the Enabler to be considered for Approved status.

The validation plan for the Browsing 2.4 Enabler Release specifications is based on testing expectations in the Enabler Test Requirements (ETR) for the same version. While the specific test activities to be performed are described in the Enabler Test Specification (ETS) the test environment is described in this plan. This test environment details infrastructure, operational and participation requirements identified for the needed testing activities.

The list of specifications, defining the scope of Browsing 2.4, as stated in [ERELD] is according to the following:

- User Agent Caching Model V1.1
- WMLScript Crypto Library
- ECMA Script Mobile Profile V1.1
- HTTP State Management Specification 1.1
- Mobile Application Environment Specification V2.4
- WAP Pictogram Specification, Version 1.1
- Wireless Application Environment Defined Media Type Specification
- Wireless Binary eXtended Markup Language
- CSS Specification V1.2
- WAP Wireless Markup Language Version 1.3
- WML Specification Information Note 102
- WML Specification Information Note 104
- WML Specification Information Note 105
- Wireless Mark up Language version 2.0
- Wireless Markup Language Script Specification
- WML Specification Information Note 101
- Wireless Markup Language Script Standard Libraries Specification
- Wireless Markup Language Script Standard Libraries Specification Information Note 103
- HTTP State Management Specification V1.3

As stated in the [ETR], the differences between version 2.3 and 2.4 are:

- XHTML MP 1.3 for converged release
- WCSS 1.2 for converged release
- ESMP 1.1 for converged release
- MAEspec24 for restructuring WAEspec23

This EVP is focused on how to validate the additions made to the Browsing 2.4 specifications, inline with the request made on the [ETR].

1.1 Assumptions

None

1.2 Exclusions

None

2. References

2.1 Normative References

[IOPPROC] "OMA Interoperability Policy and Process", Version 1.4, Open Mobile Alliance™, OMA-ORG-IOP_Process-V1_4, URL:http://www.openmobilealliance.org/

[IOPTFG] "OMA TestFest Participation Guidelines", Version 1.0, Open Mobile AllianceTM, OMA-IOP-TestFest-Participation-Guidelines-V1_0, URL:http://www.openmobilealliance.org/

[RFC2119] "Key words for use in RFCs to Indicate Requirement Levels", S. Bradner, March 1997, URL:http://www.ietf.org/rfc/rfc2119.txt

[Browsing24] "Enabler Release Definition for Browsing Version 2.4", Open Mobile Alliance™. OMA-ERELD-Browsing-V2_4. URL: http://www.openmobilealliance.org/

[ETR] "Enabler Test Requirements for Browsing V2.4", Open Mobile Alliance™. OMA-ETR-Browsing-V2_3. URL: http://www.openmobilealliance.org/

[CacheMod] "User Agent Caching Model, V1.1", Open Mobile Alliance™. OMA-TS-UACACHE-V1_1. URL: http://www.openmobilealliance.org/

[ESMP11] "ECMAScript Mobile Profile, V1.1", Open Mobile Alliance™. OMA-TS-ESMP-V1_1. URL: http://www.openmobilealliance.org/

[ESMPCrypto] "ECMAScript Crypto", Open Mobile Alliance™. OMA-WAP-ECMACR-V1.0. URL: http://www.openmobilealliance.org/

[HTTPSM] "HTTP State Management Specification, V1.1", Open Mobile Alliance™. OMA-TS-HTTPSM-V1_1. URL: http://www.openmobilealliance.org/

[MAEspec24] "Mobile Application Environment Specification, V2.4", Open Mobile Alliance™. OMA-TS-MAESpec-V2_4. URL: http://www.openmobilealliance.org/

[PICT] "WAP Pictogram, V1.1", Open Mobile Alliance™. OMA-WAP-TS-Pictogram-V1_1. URL:http://www.openmobilealliance.org/

[RFC2109] "HTTP State Management Mechanism", D. Kristol and L. Montulli, February 1997. URL: http:/www.ietf.org/rfc/rfc2109.txt

[RFC2119] "Key words for use in RFCs to Indicate Requirement Levels". S. Bradner, March 1997. URL: http://www.ietf.org/rfc/rfc2119.txt

[RFC2616] "Hypertext Transfer Protocol -- HTTP/1.1", R. Fielding et al, June 1999. URL: http://www.ietf.org/rfc/rfc2616.txt

[RFC2965] "HTTP State Management Mechanism", D. Kristol, et al, October 2000. URL: http://www.ietf.org/rfc/rfc2965.txt

[URIscheme10] "URI Schemes for the Mobile Applications Environment, Version 1.0", Open Mobile Alliance™. OMA-TS-URI_Schemes-V1_0, URL:http://www.openmobilealliance.org/

[vObject10] "vObject Minimum Interoperability Profile, Version 1.0", Open Mobile Alliance™., OMA-TS-vObjectOMAProfile-V1_0, URL:http://www.openmobilealliance.org/

[WAE23] "Wireless Application Environment Specification", Open Mobile Alliance™. OMA-WAP-WAESpec-V2_3. URL: http://www.openmobilealliance.org/

[WAEMedia] "WAE Defined Media Type", Open Mobile Alliance™. WAP-237-WAEMT. URL: http://www.openmobilealliance.org/

[WCSS12] "Wireless CSS Specification, V1.2", Open Mobile Alliance™. OMA-TS-WCSS-V1_2. URL:http://www.openmobilealliance.org/

[XHR] "The XMLHttpRequest Object,", W3C Working Draft, 26 October, 2007, URL: http://www.w3.org/TR/XMLHttpRequest/

[XHTMLMP13] "XHTML Mobile Profile 1.3", Open Mobile Alliance™. OMA-TS-XHTMLMP-V1_3. URL: http://www.openmobilealliance.org/

[XHTMLMP12] "XHTML Mobile Profile 1.2", Open Mobile Alliance™. OMA-TS-XHTMLMP-V1_2

URL: http://www.openmobilealliance.org/

[Browsing23EVP] "Enabler Validation Plan for Browsing", Version 2.3, Open Mobile Alliance™, OMA- OMA-EVP-Browsing-V2_3, URL:http://www.openmobilealliance.org/

[WML1] "Wireless Markup Language Version 1.3", Open Mobile Alliance™. WAP-191-WML. http://www.openmobilealliance.org/tech/affiliates/wap/wapindex.html

[WML2] "Wireless Markup Language", Open Mobile Alliance™. WAP-238-WML. http://www.openmobilealliance.org/tech/affiliates/wap/wapindex.html

[WMLScript] "WMLScript Language Specification", Open Mobile Alliance™. WAP-193-WMLS. http://www.openmobilealliance.org/tech/affiliates/wap/wapindex.html

[WMLStdLib] "WMLScript Standard Libraries Specification", Open Mobile Alliance™. WAP-194-WMLSL. http://www.openmobilealliance.org/tech/affiliates/wap/wapindex.html

[XHTML13ETS] "XHTML Mobile Profile 1.3 Enabler Test Specification", Open Mobile Alliance™. OMA-ETS-XHTMLMP-V1_3. URL: http://www.openmobilealliance.org/

[WCSS12ETS] "Wireless CSS Specification, V1.2 Enabler Test Specification", Open Mobile Alliance™. OMA-ETS-WCSS-V1_2. URL:http://www.openmobilealliance.org/

[ESMP11ETS] "ECMAScript Mobile Profile, V1.1 Enabler Test Specification", Open Mobile Alliance™. OMA-ETS-ESMP-V1_1. URL: http://www.openmobilealliance.org/

2.2 Informative References

[OMADICT] "Dictionary for OMA Specifications", Version 2.6, Open Mobile Alliance™, OMA-ORG-Dictionary-V2_6, URL:http://www.openmobilealliance.org/

[CSSMP20] "CSS Mobile Profile 2.0", W3C Candidate Recommendation, 2007. URL: http://www.w3.org/TR/css-mobile

[ECMA327] Standard ECMA-327, "ECMAScript 3 rd Edition Compact Profile", ECMA, June 2001, URL: ftp://ftp.ecma.ch/ecma-st/Ecma-327.pdf

[ECMAScript] Standard ECMA-262: "ECMAScript Language Specification – Edition 3", ECMA, December 1999. URL: ftp://ftp.ecma.ch/ecma-st/Ecma-262.pdf

[UAPROF] "WAG UAProf", Open Mobile Alliance™. WAP-248-UAPROF. URL:http://www.openmobilealliance.org/

[WAPArch] "WAP Architecture Specification", Open Mobile Alliance™. WAP-210-WAPArch. URL:http://www.openmobilealliance.org/

[XHTMLBasic11] "XHTML™ Basic 1.1", W3C Candidate Recommendation, Shane McCarron, et al., 13 July 2007. URL: http://www.w3.org/TR/2007/CR-xhtml-basic-20070713.

[XML] "Extensible Markup Language (XML) 1.0 (Fourth Edition)", W3C Recommendation 16 August 2006, Tim Bray et al. URL: http://www.w3.org/TR/xml/

[SMIL21] "Synchronized Multimedia Integration Language (SMIL 2.1)", W3C Recommendation, Dick Bulterman et al, 13 December 2005. URL: http://www.w3.org/TR/2005/REC-SMIL2-20051213/

[RME] "Rich Media Environment, V1.0", Open Mobile Alliance™. OMA-TS-RME-V1_0, URL:http://www.openmobilealliance.org/

[URIScheme] "URI Schemes for the Mobile Applications Environment, V1.0", Open Mobile Alliance™. OMA-TS-URI_Schemes-V1_0, 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”, are normative, unless they are explicitly indicated to be informative.

3.2 Definitions

Application Addressing	the ability to address a particular user agent on a WAP client
Browsing	The act of using a **PC Browser** or **WAE User Agent** to access content from a server using the established WWW request-response model using HTTP to establish sessions between client and server through intermediate networks and performance enhancing proxies. **Client** - in the context of push, a client is a device (or service) that expects to receive push content from a server. In the context of pull a client, it is a device initiates a request to a server for content or data. See also "device".
Contact Point	Address information that describes how to reach a push proxy gateway, including transport protocol address and port of the push proxy gateway.
Content	Subject matter (data) stored or generated at an origin server. Content is typically displayed or interpreted by a user agent on a client. Content can either be returned in response to a user request, or pushed directly to a client.
Content Encoding	When used as a verb, content encoding indicates the act of converting a data object from one format to another. Typically the resulting format requires less physical space than the original, is easier to process or store, and/or is encrypted. When used as a noun, content encoding specifies a particular format or encoding standard or process
Content Format (or Format)	Actual representation of content
Deprecated	A deprecated feature (e.g. specification, element or attribute) is one that has been outdated by a newer feature. Deprecated features are defined in the specification and are clearly marked as deprecated. Deprecated features may become obsolete in a future version.
Device	A network entity that is capable of sending and receiving packets of information and has a unique device address. A device can act as both a client and a server within a given context or across multiple contexts. For example, a device can service a number of clients (as a server) while being a client to another server
ECMA Script	A scripting language produced and managed by the European Computer Manufacturers Association (ECMA) which provides a common scripting language for the computer industry
Enabler Release	A collection of specifications that combined together form an enabler for a service area, e.g. a download enabler, a browsing enabler, a messaging enabler, a location enabler, etc. The specifications that are forming an enabler should combined fulfill a number of related market requirements
End-user	See "user"
Gateway (or WAP Gateway)	A server which acts as an intermediary for some other server. A gateway performs protocol transformation as well as encoding/decoding content.
Host Object	ECMA Script objects provided by the user agent for the purpose of interaction with the loaded document.
Hypermedia Transfer	The hypermedia transfer services provides for the transfer of self-describing hypermedia resources. The combination of WSP (Wireless Session Protocol) and WTP (Wireless

	Transaction Protocol) provide the hypermedia transfer service over secure and non-secure datagram transports over datagram-based protocol stack. The W-HTTP (Wireless Profiled Hypertext Transfer Protocol), a profile of HTTP/1.1 [RFC2616] provides the hypermedia transfer service over secure and non-secure connection-oriented transports over connection-oriented protocol stack.
Origin Server	The server on which a given resource resides or is to be created. Often referred to as a web server or an HTTP server.
Media type	A MIME media type or an identifier for a given data type.
Minimum Functionality Description	Description of the guaranteed features and functionality that will be enabled by implementing the minimum mandatory part of the Enabler Release.
PC Browser	An existing Web browser that supports text/html.
Resource	A network data object or service that can be identified by a URL. Resources may be available in multiple representations (e.g., multiple languages, data formats, size, and resolutions) or vary in other ways.
Server	A device (or application) that passively waits for connection requests from one or more clients. A server may accept or reject a connection request from a client. Also Origin Server.
Terminal	A device typically used by a user to request and receive information. Also called a mobile terminal or mobile station.
Terminal-ID	An identifier that is used by a PPG to uniquely identify a terminal.
User	A user is a person who interacts with a user agent to view, hear, or otherwise use a rendered content. Also referred to as end-user.
User agent	A user agent (or content interpreter) is any software or device that interprets resources. This may include textual browsers, voice browsers, search engines, etc.
WAE User Agent (or User Agent)	A User Agent is any software or device that interprets markup and scripting languages or other content. This may include textual browsers, voice browsers, search engines, etc.
WAE version	The version of the WAE User Agent. The version of the WAE User Agent may be uniquely identifiable by the WAP version, e.g. WAP version 1.1 contains WAE version 1.1, or it may be a feature of the WAP version in which case the WAE versioning mechanisms are used to determine the WAE User Agent version.
WAP1	WAP Version 1, nominally the latest point release, e.g. WAP V1.2.1, unless otherwise noted.
WAP2	WAP Version 2. When used as a prefix, it indicates that something is compliant to the WAP Version 2 conformance requirements, e.g., a WAP2 client is a client that fulfils all the requirements for a user agent of WAP Version 2. WAP2 content is content with a media type specified in WAP Version 2.
WAP Proxy	An intermediary program which acts as both a server and a client for the purpose of making requests on behalf of other clients. Requests are serviced internally or by passing them on, with possible translation, to other servers. It may provide functions of protocol enhancement, transcoding or any number of other optimization or transformation functions and may be associated with any gateways, proxies or servers being used in the deployment architecture. WAP gateway is one of the optional functionalities of WAP proxy.
WML	The Wireless Markup Language is a hypertext markup language used to represent information for delivery to a narrowband device, e.g., a phone.
WML Script	A scripting language used to program the mobile device. WML Script is modeled on the ECMA Script scripting language.
XHTML	The W3Cs codification of HTML version 4.01 in an XML.

XML	The Extensible Markup Language is a World Wide Web Consortium (W3C) standard for Internet markup languages, of which WML is one such language. XML is a restricted subset of SGML.
vCalendar	Internet Mail Consortium (IMC) electronic calendar record.
vCard	Internet Mail Consortium (IMC) electronic business card.

3.3 Abbreviations

CSS	Cascading Style Sheets
DRM	Digital Rights Management
ECMA	European Computer Manufacturer Association
EFI	External Functionality Interface
ERDEF	Enabler Requirement Definition
ERELD	Enabler Release Definition
ESMP	ECMAScript Mobile Profile see [ESMP]
ETR	Enabler Test Requirements, see [IOPProc]
HTML	HyperText Markup Language
HTTP	HyperText Transfer Protocol
HTTPSM	HypeText Transfer Protocol State Management, see [HTTPSM]
OMA	Open Mobile Alliance
OTA	Over The Air
OTA-HTTP	(Push) OTA over HTTP
OTA-HTTP-TLS	OTA-HTTP over TLS
OTA-WSP	(Push) OTA over WSP
PDP	Packet Data Protocol
PI	Push Initiator
PO-TCP	PPG Originated TCP connection establishment method
PPG	Push Proxy Gateway
RTT	Round Trip Time
SI	Service Indication
SL	Service Loading
TOD	Time Of Day
WAESpec	Wireless Application Environment Specification, see [WAESpec]
WAP	Wireless Application Protocol
WCSS	Wireless Cascading Style Sheet, see [WCSS]
UAProf	User Agent Profile
W3C	World Wide Web Consortium
W-HTTP	Wireless Profiled HTTP
WML	Wireless Markup Language (WML1 or WML2)
WML1	Wireless Markup Language Version 1.3
WML2	Wireless Markup Language Version 2.0
WWW	World Wide Web
WSP	Wireless Session Protocol
WAP	Wireless Application Protocol
WAE	Wireless Application Environment. Unless otherwise stated it refers to this version.
WAE20	Wireless Application Environment version 2.0 [WAE20]
WTA	Wireless Telephony Application
WTAI	Wireless Telephony Application Interface
WBMP	Wireless BitMaP
XHTML	Extensible HyperText Markup Language
XHTMLMP	Extensible HyperText Markup Language Mobile Profile, see [XHTMLMP]
XHR	XMLHttpRequest

4. Enabler Validation Description

Browsing enabler specifications are in general terms a set of rules that user agents have to obey when presenting digital content. On a strict analysis, there cannot be any interoperability validation of these rules as the only applicable to the server is to be transparent on the areas covered by the specs and to support the used protocols that are out of the scope of the enabler and for the client to respect them on a conformant way.

However, on a more broad sense, it can be said that the objectives of Browsing is to get a good interoperability between the content and the user. Due to the complexity and extension of the specifications this interoperability at the user level is difficult to achieve and justifies the support for a wide validation of the enabler specifications.

The validation of Browsing 2.4 is aligned with the one made for previous versions [Browsing23EVP]. However above all it will be focused on the new functionalities added to the enabler.

As on the [ETR] the differences to be primarily tested are:

1. On XHTML MP:
    a. To test the consistency of the new DTD usage with the existing code in general
    b. To test the gracefully ignoring of the “target attribute module” existing on the W3C DTD
2. On WCSS:
    a. Test the new syntax of the “Marquee”
3. On ESMP:
    a. Integration of the namespace support including properties and methods;
    b. Support of the DOM2 event model;
    c. Support of the XML HTTP request;
    d. Removable of the name on forms;
    e. Support of semicolons no longer mandated.
4. On MAESpec
    a. Support of the new MIME types namely SMIL, SVG and RME

5. TestFest Activities

5.1 Enabler Test Guidelines

A full description of Browsing V2.4 can be found in the ERELD and specifications.

Browsing 2.4 provides the OMA browsing capability for mobile and wireless handheld devices by defining the necessary capabilities of client and server in the end to end request-response model. Browsing 2.4 also specifies any necessary or optional supporting network services that may be provided on a gateway or proxy.

Browsing 2.4 uses much of the internet technology used in today's PC Browsers to access content on the World Wide Web (WWW) but limits the specified profiles of this technology to that appropriate to the constrained resources and user interface of mobile and wireless handheld devices, e.g. reduced memory, processing power, communications bandwidth, display and user input capabilities, including some extensions to improve the user experience.

Browsing V2.4 is an enhancement of Browsing V2.3, providing the markup and script convergence with the Internet standards maintained by W3C, through the use of a converged XHTML Mobile Profile [XHTMLMP13], Wireless Cascading Style Sheets [WCSS12] and ECMAScript Mobile Profile [ESMP11].

The suite of specifications defining Browsing V2.4 defines the application-level protocols, semantics, syntax, content formats, user agent behavior, and the use of hypermedia transfer protocols required to achieve consistent function and interoperability of services.

Browsing 2.4, or the MAE User Agent, support the following features directly through the MAE Specification [MAESpec]:

- Markup language based content to be rendered to the user of the device;
  - WML V1.3 [WML1], WML V2.0 [WML2] and XHTMLMP V1.3 [XHTMLMP13] are specified. The XHTMLMP specification also provides HTML rendering capability within the limit of the device's capabilities. The WML family is deprecated on the latest versions of Browsing.
- Style capabilities to enhance the presentation of markup on devices supporting it.
  - The style is provided by the WAP Cascading Style Sheet V1.2 [WCSS12] specification which is a converged version of the CSS V2.0 mobile profile [CSSMP20].
- Scripting language augmentation of the markup content to allow extended functionality and user experience;
  - WMLScript [WMLScript], with its associated WMLScript Library [WMLStdLib], marked as deprecated on the latest Browsing version and
  - ECMAScript Mobile Profile V1.1 [ESMP11] along with a well known set of host objects enhanced on current version 1.1.
- Image and other content support;
  - "WAP Pictogram Specification" PICT defines the common pictogram set and the format of its use within content. The common pictogram set is a set of pictograms that the User Agents recognise;
  - SVG is a language for describing two-dimensional graphics and graphical applications in XML [XML];
  - SMIL is a language that enables simple authoring of interactive audiovisual presentations [SMIL21];
  - RME is an enabler to provide enhanced rich media services. RME [RME] is an environment to facilitate rich media user experience;
  - WBMP is a unique, efficient, monochrome format for devices and predecessor devices but other types are supported, the types dependent on the device. WBMP is defined in the MAE Media Types specification [WAEMedia];
  - vObjects are profiles of electronic business cards, Internet calendar and scheduling core objects, and bookmark are defined in **Error! Reference source not found.**;
  - MAE defines in [URIScheme] the general identification of a resource for resolving a number of URI scheme and optionally parameters for carrying content and context specific information;

- Local caching of content to improve user experience and reduce network usage.[CacheMod];
- HTTP State Management [HTTPSM], or cookies in common terminology, to provide the means to convey state and state information between user and application server, e.g. session identifiers, time and date information of last access, recent enquiries to that application, to aid the user's access to that application;

The Browsing 2.4 enabler also supports optional extensions to this basic browsing environment which are out of scope of the validation for this and previous versions, namely

- Download and DRM
  - Provides a common means to download content over the air and manage the lifecycle of the content using Digital Rights Management with the rights expressed in a Rights Expression Language;
  - External Functionality Interface EFI extends the browser to include other hardware or software elements through the use of markup and script interfaces. The discovery of these elements is enabled thereby allowing them to be used, e.g. start or stop another application, retrieve a digital photograph from a camera, etc.
- Push
  - PUSH provides an alert mechanism with the ability to have the alert provide a link to content which is subsequently pulled using the browser.
- MMS ERELD
  - The Multimedia Messaging Service provides the means to send and receive rich media messages and uses Push for the alert mechanism.
- Synchronization
- Application level signing of content
  - This is provided through the use of scripting extensions of the basic scripting environment by the ECMA Script Cypto Object and WMLScript Crypto Library features.
- WBXML
  - A compact format used for WAP Version 1.x browsers and still supported for other features though not required for the Browser per se.
- Wireless Telephony Application Interface
  - The WTA feature is not specifically addressed by the Browsing enabler though it utilizes many of the Browsing features, but the Browsing specification does provide access to the Public Wireless Telephony Application Interface (WTAI).
- Persistent Storage
  - This provides a means to store data objects locally, personal details, applications, etc., within a device for use by applications and allows improved user experience

Features such as Provisioning and UAPROF are not specifically called out but are related and presented in the [MAEspec24].

5.1.1 Minimal Test Configuration

The minimal test configuration of [Browsing 24] shall include:

- A Client implementation
- The OMA Browsing test server populated with the applicable test suites
- HTTP access to the server from the clients via a mobile telephony network or wired network

5.1.2 Minimal Participation Guidelines

As the tests will validate the interoperability between the content and the user the minimum participation will be:

- 3 client implementations and respective users
- The OMA Browsing test server populated with the applicable test suites

The WAP GW/Proxies are not needed since the only requirement is for them to be transparent. However any registration of the WAP GW/Proxies or content server is encouraged.

5.1.3 Optimal TestFest Achievement Guidelines

The ETS Test Cases listed below represent a subset of all the Test Cases for the Enabler that it is thought can be executed in a test session at an OMA TestFest. This list is intended to facilitate maximum test coverage of the functionality of the enabler within a test session. It is not intended to be the only tests executed at a TestFest, and teams are encouraged to execute more tests if they are able to do in the time allowed.

All the XHTML MP 1.3 test cases included on XHTML MP 1.3 Conformance ETS

All the WCSS 1.2 test cases included on the WCSS 1.2 Conformance ETS

All the ESMP 1.1 test cases included on the ESMP 1.1 Conformance ETS

5.2 Enabler Test Requirements

5.2.1 Test Infrastructure Requirements

The testing shall be performed as end-to-end testing. Most likely the client participants will be in one place, while the participant gateways and proxies will be located in member companies premises, accessible to the rest of the test fest environment. Such a “distributed” test fest environment puts effort on the test fest host and requires detailed documented configuration.

The Network Elements involved in Browsing Testing are:

- PLMN (GSM/GPRS)
- An SMS-C Supporting SMPP 3.4 or higher (optional)
- A Gateway supporting Browsing 2.4
- Clients supporting Browsing 2.4
- Origin servers holding the Browsing test content. At least the OMA Browsing test server

A Network Analyzer for Network Monitoring/Protocol Analyzing is also useful.

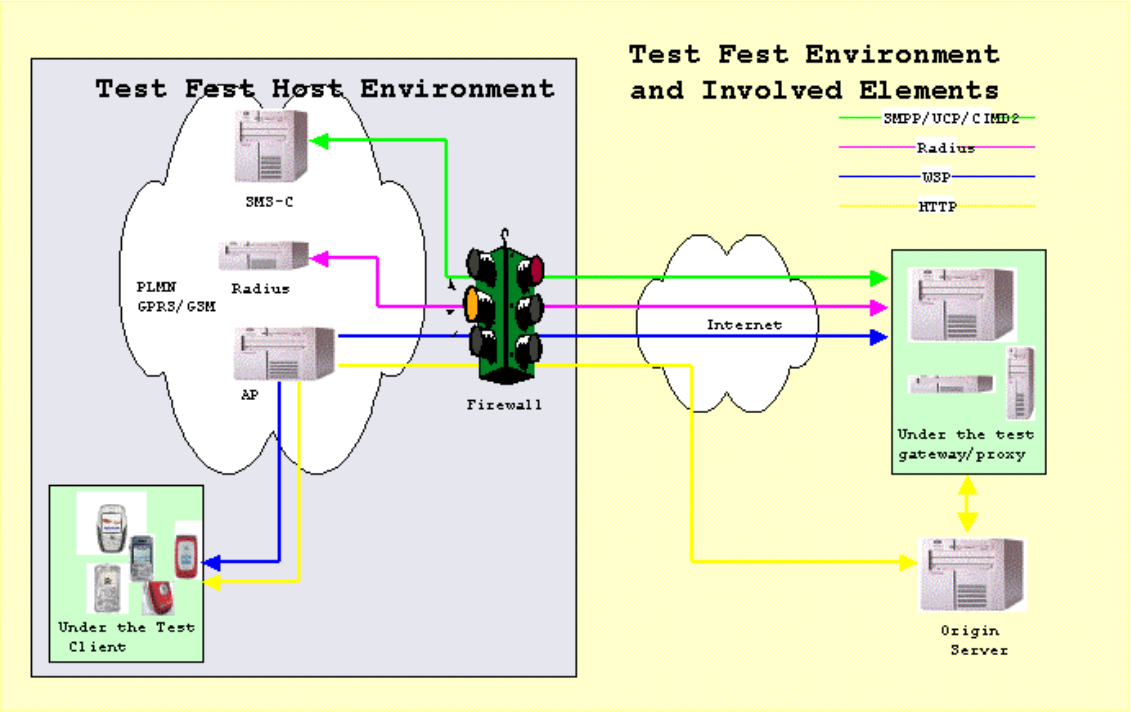

Figure 1: Involved elements for testing browsing

5.2.2 Enabler Execution Flow

The following diagrams provide a high level overview of the message exchanges between the involved elements of the Browsing test environment based on the W-HTTP stack. The WSP stack diagrams were removed since the protocol is optional as in previous version but now not an exclusive option but as a complementary option to W-HTTP that is now mandatory.

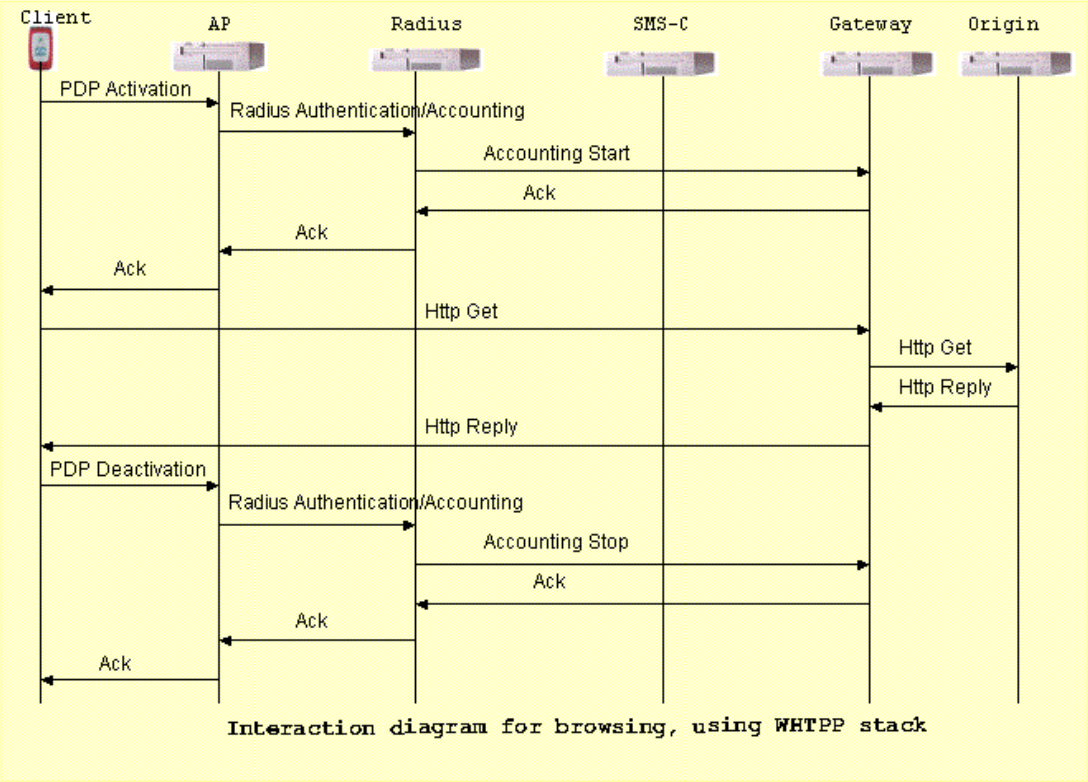

Figure 2 : WHTTP Stack

5.2.3 Test Content Requirements

The test content at the OMA Content Server (http://testfest.openmobilealliance.org/) shall be used. This content is also available on a zip format at OMA site (http://www.openmobilealliance.org/Technical/release_program/ETS.aspx) on the Releases – Enabler Test Specifications pages.

5.2.4 Test Limitations

5.2.4.1 Physical

None

5.2.4.2 Resources

None

5.2.5 Test Restrictions

None

5.2.6 Test Tools

5.2.6.1 Existing Tools to be used

The test tool needed to carry out the conformance test cases is the OMA Browsing HTTP 1.1 [RFC2616] test server with the following test suites:

- ESMP 1.1 Test Suite as referred in [ESMP11ETS]
- WCCS 1.2 Test Suite as referred in [WCSS12ETS]
- XHTML MP 1.3 Suite as referred in [XHTML13ETS]

5.2.6.2 Test Tool Requirements

No additional one

5.2.7 Resources Required

All test cases can be run in a 3 hour slot. However, on the event of complex testing, may be require more time so participants can compare results with each others.

5.3 Tests to be Performed

The following sections describe the tests related to the formal TestFest validation activities.

5.3.1 Entry Criteria for TestFest

The following tests need to be performed and passed by implementations by members wishing to participate in the TestFest. This ensures minimal requisite capability of the implementations. The tests are defined in the ETSs [XHTML13ETS], [WCSS12ETS] and [ESMP11ETS] and any special comments are noted.

Test Case Id	Special Conditions
xHTMLMP-1.3-conf-1	None
xHTMLMP-1.3-conf-26	None
xHTMLMP-1.3-conf-32	None
ESMP-1.0-conf-2	None
ESMP-1.0-conf-5	None
ESMP-1.0-conf-38	None
WCSS-1.2-con-2	None
WCSS-1.2-con-30	None
WCSS-1.2-con-37	None

Table 1: Listing of Tests for Entry Criteria for TestFest

5.3.2 Testing to be Performed at TestFest

The following tests need to be performed to fully cover the range of capabilities of the enabler and defined protocols. These tests are to be covered in the TestFest. The tests are defined in the ETS [XXXETS] and any special comments are noted.

- All the test cases from [ESMP11ETS]
- All the test cases from [XHTML13ETS]
- All the test cases from [WCSS12ETS]

5.4 Enabler Test Reporting

5.4.1 Problem Reporting Requirements

Normal Reporting, no special reporting required.

5.4.2 Enabler Test Requirements

Normal Reporting, no special reporting required

6. Alternative Validation Activities

Members are invited to execute the test cases at their premises against the OMA Browsing test server and to submit results.

The Trusted Zone, when having enough test results collections in order to protect the anonymity of the implementers or if they do not want to preserve that anonymity, will publish an enabler test report to explicitly show that the specifications are implementable on a working manner.

7. Approval Criteria

The Browsing 2.4 Enabler can be put in the Approved state when:

- The test cases that cover the new areas on the version have been executed successfully at 1 Test Fests or
- 3 companies have successfully run bilateral tests towards the OMA test server and have reported results and
- No open PRs exist.

7.1 Enabler Validation Test Cases

The following table should list the set of tests that are used for enabler validation.

Test Case Id	ETR Requirement Id	ETR Status	Notes
ESMP-1.0-conf-3	N/A	M	
ESMP-1.0-conf-38	N/A	M	
ESMP-1.0-conf-54	N/A	M	
xHTMLMP-1.3-conf-19	N/A	M	
xHTMLMP-1.3-conf-26	N/A	M	
WCSS-1.2-con-31	N/A	M	
WCSS-1.2-con-34	N/A	M	
WCSS-1.2-con-36	N/A	M	
WCSS-1.2-con-37	N/A	M	

Table 2: Enabler Validation Test Cases

7.2 Non-Covered ETR Requirements

Any restrictions, limitations and/or infeasibility of testing of the ETR requirements should be stated in this section.

If new information about limitations and/or infeasibility of testing of any of the ETR requirements is discovered, this section should be updated accordingly.

- None

Appendix A. Change History (Informative)

A.1 Approved Version History

Reference	Date	Description
n/a	n/a	No previous version within OMA

A.2 Draft/Candidate Version 2.4 History

Document Identifier	Date	Sections	Description
Draft Versions OMA-Browsing-V2_4	23 July 2008	All	First draft
	18 Feb 2010	2.1, 5.3.1, 5.3.2, 7	CR incorporated: OMA-IOP-BRO-2010-0014
Candidate Versions OMA-Browsing-V2_4	23 Mar 2010	n/a	Status changed to Candidate by TP TP ref# OMA-TP-2010-0119-INP_BRW_24_EVP_for_Candidate_Approval