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Enabler Release Definition for External Functionality Interface
Candidate Version 1.1 – 9 Jun 2004

Open Mobile Alliance
OMA-ERELD-EFI-V1_1-20040609-C

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Contents

1. Scope

The scope of this document is limited to the Enabler Release Definition (ERELD) of Extenal Functionality Interface V1.1 [EFI] according to OMA Release process and the Enabler Release specification baseline listed in section 5.

2. References

2.1 Normative References

[EFI-ERELD]	"Enabler Release Definition for EFI V1.1", Open Mobile Allance™. OMA-ERELD-EFI-V1_1. URL:http://www.openmobilealliance.org.
[EFI]	"External Functionality Interface Framework, Version 1.1", Open Mobile Alliance™. OMA-WAP-EFI-V1.1. URL:http://www.openmobilealliance.org/
[EFICDP]	"External Functionality Interface Class Definition Process, V1.1", Open Mobile Alliance™. OMA-WAP-WFICDP-V1.1. URL:http://www.openmobilealliance.org/
[EFIMAC]	"External Functionality Interface Manage Application Class, Version 1.1", Open Mobile Alliance™. OMA-WAP-EFIMAC-V1.1. URL:http://www.openmobilealliance.org/
[EFITest]	"External Functionality Interface Test Class, Version 1.1", Open Mobile Alliance™. OMA-WAP-EFITest-V1.1. URL:http://www.openmobilealliance.org/
[IOPProc]	"OMA Interoperability Policy and Process". Open Mobile Alliance™. OMA-IOP-Process-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

2.2 Informative References

[Browsing22]	"Enabler Release Definition for Browsing V2.2", Open Mobile Alliance™. OMA-ERELD-Browsing-V2_2. URL:http://www.openmobilealliance.org.
[ESMP]	"ECMAScript Mobile Profile", Open Mobile Alliance™. OMA-WAP-ESMP-V1_0. URL:http://www.openmobilealliance.org/
[WAE]	"Wireless Application Environment Specification, version 2.2", Open Mobile Alliance™. OMA-WAP-WAESpec-V2_2. URL:http://www.openmobilealliance.org/
[WML1]	"Wireless Markup Language Version 1.3", WAP Forum™. WAP-191-WML. URL:http://www.openmobilealliance.org/
[WMLScript]	"WMLScript Language Specification", WAP Forum™. WAP-193-WMLS. URL:http://www.openmobilealliance.org/
[XHTMLMP]	"XHTML Mobile Profile 1.1", Open Mobile Alliance™. OMA-WAP-XHTMLMP-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.

The formal notation convention used in sections 8 and 9 to formally express the structure and internal dependencies between specifications in the Enabler Release specification baseline is detailed in [IOPProc].

3.2   Definitions

Client - a device (or application) that initiates a request for connection with a server.

Content - synonym for data objects.

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.

ECMAScript – a scripting language produced and managed by the European Computer Manufacturers Association (ECMA) that 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 fulfil a number of related market requirements.

Minimum Functionality Description – Description of the guaranteed features and functionality that will be enabled by implementing the minimum mandatory part of the Enabler Release.

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.

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.

User - a user is a person who interacts with a User Agent to access a resource.

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.

WML - The Wireless Markup Language is a hypertext markup language used to represent information for delivery to a narrowband device, e.g., a phone.

WMLScript - A scripting language used to program the mobile device. WMLScript is an extended subset of the ECMAScript scripting language.

XHTML – The W3Cs codification of HTML version 4.01 in an XML.

3.3   Abbreviations

EFI	External Functionality Interface
ERDEF	Enabler Requirement Definition
ERELD	Enabler Release Definition
ESMP	ECMAScript Mobile Profile

OMA	Open Mobile Alliance
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
WAP	Wireless Application Protocol
WAE	Wireless Application Environment. Unless otherwise stated it refers to this version.
XHTML	Extensible HyperText Markup Language

4. Introduction

This document outlines the External Functionality Interface V1.1 Release Definition and the respective conformance requirements for clients and servers implementing claiming compliance to it as defined by Open Mobile Alliance across the specification baseline.

The EFI enabler defines the means through which components or entities with embedded applications that execute outside of the Wireless Application Environment [WAE] user agent, such as that in OMA Browsing V2.2 [Browsing22] or other user agents, and conform to the external functionality requirements, can be utilised via these user agents. Such external functionality may be built-in to, or connected to, a mobile terminal terminal supporting these user agents and the connection can be permanent or temporary.

The [EFI] provides a convenient and uniform way to facilitate the connection between the application, comprising markup, e.g. [XHTMLMP] or [WML1], and/or script, e.g. [ESMP] or [WMLScript], running in a user agent, and new functionality exposed to and usable by the user agent via the [EFI]. The [EFI] specifications consists of the Framework, the Process specification and a set of Class Specifications, each one specific to the given application area.

The EFI Framework [EFI] defines the general behaviour of [EFI] implementation in the terminal while detailed requirements for the class are provided in individual Class Specification documents. The Process specification [EFICDP] facilitates the development of Class Specifications by defining steps that should be taken in order to achieve the quality Class Specification.

The EFI Application Interface (EFI AI) is a high level interface that shall suit a number of different applications. Various external functions are grouped in classes that offer common functionality across different makes and versions of terminals and external functionality entities. The EFI Framework provides an extensible set of interfaces that can support services, including the ability to query for the particular service as well as the ability to capture the functionality that is specific to the given device or software installed. However, there is no functionality to dynamically add new services so there is no general service discovery mechanism.

5. Enabler Release Specification Baseline

This section is normative.

The following list of specifications form the External Functionality Interface V1.1 Enabler Release, though a given device or proxy or server may support a valid subset of these specifications and the features contained within those specifications. The actual minimum profile for a device is defined in section 8 "ERDEF for EIF V1.1 – Client Requirements". The minimum profile for the proxy in section 9 "ERDEF for EFI V1.1 - Server Requirements". A description of the minimum EFI functionality being in section 6 "Minimum Functionality Description for EFI V1.1".

"External Functionality Interface Framework, Version 1.1" [EFI]

"External Functionality Interface Class Definition Process, V1.1" [EFICDP]

"External Functionality Interface Manage Application Class, Version 1.1" [EFIMAC]

"External Functionality Interface Test Class, Version 1.1" [EFITest]

6. Minimum Functionality Description for EFI V1.1

The minimum functionality description for the EFI Version 1.1 enabler release is the support for the minimum requirements of :

External Functionality Interface Framework, Version 1.1 [EFI]

The minimum functionality of an EFI Version 1.1 client is support for at least one markup and script based application programming interface, i.e. either the combination of XHTML [XHTMLMP] and ECMAScript [ESMP] or/and the combination of WML [WML1] and WMLScript [WMLScript] interfaces, to the external functionality being accessed via the browser [Browsing22].

EFI Version 1.1 is designed to be backwards compatible with version 1.0, i.e. the existing [WML1] and [WMLScript] implementation is the same.

7. Conformance Requirements Notation Details

This section is informative

The tables in following chapters use the following notation:

Item:
Entry in this column MUST be a valid ScrItem according to [IOPProc].

Feature/Application:
Entry in this column SHOULD be a short descriptive label to the **Item** in question.

Status:
Entry in this column MUST accurately reflect the architectural status of the **Item** in question.
- M means the **Item** is mandatory for the class
- O means the **Item** is optional for the class
- NA means the **Item** is not applicable for the class

Requirement:
Expression in the column MUST be a valid TerminalExpression according to [IOPProc] and it MUST accurately reflect the architectural requirement of the **Item** in question.

8. ERDEF for EFI V1.1 - Client Requirements

This section is normative.

Table 1 ERDEF for EFI V1.1 Client-side Requirements

Item	Feature / Application	Status	Requirement
OMA-ERDEF-EFI-C-001	EFI V1.1 Client	M	EFI:MCF
OMA-ERDEF-EFI-C-002	EFI V1.1 Manage Application Class support	O	EFIMAC:MCF

9. ERDEF for EFI V1.1 - Server Requirements

This section is normative.

Table 2 ERDEF for EFI V1.1 Server-side Requirements

Item	Feature / Application	Status	Requirement
OMA-ERDEF-EFI-S-001	EFI V1.1 Server	M	EFI:MSF

Appendix A.   Change History   (Informative)

A.1   Approved Version History

Reference	Date	Description
n/a	n/a	No prior version –or- No previous version within OMA

A.2   Draft/Candidate Version 1.1 History

Document Identifier	Date	Sections	Description
Draft Versions OMA-ERELD-EFI-V1_1	20 Jun 2003		The initial version of this document.
	17 Nov 2003	Template, Front matter, 2.2, 3.2, 4	General update
	19 Apr 2004	Front matter, 2.1, 6, 8, A2	Address consstency comments. Updated date on title and front matter. Removed date from IOPProc reference. Added text describing minimum conformance to section 6. Added EFIMAC as client SCR item in sectiomn 8. Updated history
Candidate Version OMA-ERELD-EFI-V1_1	9 Jun 2004	n/a	Status changed to Candidate by TP TP ref # OMA-TP-2004-0189-EFI-V1_1-for-candidate