



# **Enabler Release Definition for Push**

Candidate Version 2.2 – 02 Oct 2007

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**Open Mobile Alliance**  
OMA-ERELED-Push-V2\_2-20071002-C

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# 1. Scope

The scope of this document is limited to the Enabler Release Definition of Push according to OMA Release process and the Enabler Release specification baseline listed in section 5.

The Push enabler release defines the application level protocols, syntax and behaviours of client and server for the fulfilment of push services. Push service is defined as communication of content toward a client without an explicit request.

## 2. References

### 2.1 Normative References

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- [IOPPROC] "OMA Interoperability Policy and Process", Version 1.1, Open Mobile Alliance™, OMA-IOP-Process-V1\_1, [URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [PPGService] "Push Proxy Gateway Service Specification". Open Mobile Alliance™. OMA-WAP-TS-PPGService-V2\_1. [URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [PushCO] "Cache Operation". Open Mobile Alliance™. WAP-175-CacheOp. [URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
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- [PushETR] "Push 2.2 Enabler Test Requirements". Open Mobile Alliance™. OMA-ETR-Push-V2\_2 [URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [PushOTA] "Push OTA Protocol Specification". Open Mobile Alliance™. OMA-WAP-TS-PushOTA-V2\_2. [URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [PushPAP] "Push Access Protocol Specification". Open Mobile Alliance™. OMA-WAP-TS-PAP-V2\_2 [URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [PushMsg] "Push Message Specification". Open Mobile Alliance™. WAP-251-PushMessage [URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [PushSI] "Service Indication". Open Mobile Alliance™. WAP-167-ServiceInd [URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [PushMO] "Push Management Object". Open Mobile Alliance™. OMA-TS-BAC-CD\_Push\_MO\_V1.0. [URL: http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [PushSI-SIN] "Service Indication-Specification Information Note". Open Mobile Alliance™. WAP-167\_103-ServiceInd [URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [PushSL] "Service Load". Open Mobile Alliance™. WAP-168-ServiceLoad [URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [PushSL-SIN] "Service Load-Specification Information Note". Open Mobile Alliance™. WAP-168\_103-ServiceLoad [URL:http://www.openmobilealliance.org/](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](http://www.ietf.org/rfc/rfc2119.txt)

## 2.2 Informative References

- [BrowsingStack] "Browser Protocol Stack V2\_1", Open Mobile Alliance™. OMA-Browser\_Protocol\_Stack-V2\_1-20050204-C [URL: http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [EMN] "Email Notification" Version 1.0. OMA-Push-EMN-V1\_0, Open Mobile Alliance™. [URL: http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [EMNEnabler] "Enabler Release Definition Email Notification" Version 1.0. OMA-ERELED-EMN-V1\_0, Open Mobile Alliance™. [URL: http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [OMNA] "OMA Naming Authority". Open Mobile Alliance™. [URL: http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [PushArch] "Push Architectural Overview". Open Mobile Alliance™. OMA-AD-Push-V2\_2 [URL: http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [Push2.1] "Enabler Release Definition for Push Version 2.1", Open Mobile Alliance™. OMA-ERELED-Push-V2\_1. [URL: http://www.openmobilealliance.org/](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

<b>Enabler Release</b>	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.
<b>Minimum Functionality Description</b>	Description of the guaranteed features and functionality that will be enabled by implementing the minimum mandatory part of the Enabler Release
<b>Push Access Protocol</b>	A protocol used for conveying content that should be pushed to a client, and push related control information, between a Push Initiator and a Push Proxy/Gateway
<b>Push Framework</b>	The entire WAP push system. The push framework encompasses the protocols, service interfaces, and software entities that provide the means to push data to user agents in the WAP client.
<b>Push Initiator</b>	The entity that originates push content and submits it to the push framework for delivery to a user agent on a client.
<b>Push OTA Protocol</b>	A protocol used for conveying content between a Push Proxy/Gateway and a certain user agent on a client.
<b>Push Proxy Gateway</b>	A proxy gateway that provides push proxy services.

### 3.3 Abbreviations

<b>CO</b>	Cache Operation
<b>DTD</b>	Document Type Definition
<b>EMN</b>	Email Notification
<b>ERDEF</b>	Enabler Requirement Definition
<b>ERELD</b>	Enabler Release Definition
<b>OMA</b>	Open Mobile Alliance
<b>OMNA</b>	OMA Naming Authority
<b>OTA</b>	Over The Air
<b>OTA-HTTP</b>	Over the Air Protocol Variant (HTTP)
<b>OTA-WSP</b>	Over the Air Protocol Variant (Wireless Session Protocol)
<b>PAP</b>	Push Access Protocol
<b>PPG</b>	Push Proxy Gateway
<b>PI</b>	Push Initiator
<b>SI</b>	Service Indication
<b>SL</b>	Service Load



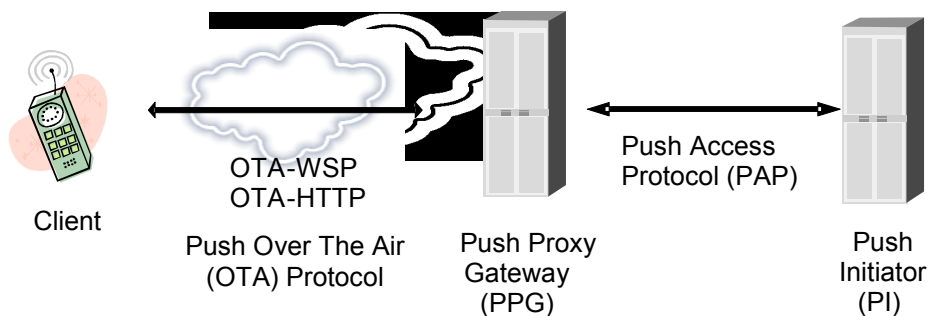
## 4. Release Version 2.2 Overview

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

A push operation in OMA is accomplished by allowing a *Push Initiator* (PI) to transmit *push content* and *delivery instructions* to a *Push Proxy Gateway* (PPG), which then delivers the push content to the WAP client (henceforth referred to as "client" or "terminal") according to the delivery instructions.

The PI is typically an application that runs on an ordinary web server. It communicates with the PPG using the *Push Access Protocol* (PAP). The PPG uses the *Push Over-The-Air* (OTA) *Protocol* to deliver the push content to the client. The protocol framework is dependent on the protocol stack defined in the Browsing Protocol Stack Enabler [BrowsingStack].

Figure 1 illustrates the push framework:



**Figure 1: The Push Framework**

**PAP** is based on standard Internet protocols; XML is used to express the delivery instructions, and the push content can be any MIME media type. These standards help make WAP Push flexible and extensible.

As mentioned, the **PPG** is responsible for delivering the push content to the client. In doing so it potentially may need to translate the client address provided by the PI into a format understood by the mobile network, transform the push content to adapt it to the client's capabilities, store the content if the client is currently unavailable, etc. The PPG does more than deliver messages. For example, it may notify the PI about the final outcome of a push submission and optionally handle cancellation, replace, or client capability requests from the PI.

The **OTA** protocol provides both connectionless and connection-oriented services. While the (mandatory) connectionless service relies upon Wireless Session Protocol (WSP), the (optional) connection-oriented service may be provided in conjunction with both WSP (OTA-WSP) and HTTP (OTA-HTTP) [using Wireless profiled HTTP (W-HTTP)

The push specification suite also encompasses content types which can be pushed. These specifications define the syntax, semantics and transport optimized forms of the content types. The content types are **Service Indication** (SI), **Service Load** (SL), **Cache Operation** (CO) and **Email Notification** (EMN).

### 4.1 Version 2.2 Functionality

This enabler release continues on the work of the OMA in the area of Push and is an extension of the Push 2.1 Enabler release [Push2.1] defining push security mechanisms. An aspect of the defined push security mechanisms depend on device management object extension defined in [PushOTA] which depends on the OMA Device Management Enabler [ERELDDM].

In addition this enabler release definition defines a minimum level of conformance for segmentation and re-assembly for SMS based Push, as well as push initiator guidelines on the most efficient way to use this form of push delivery mechanism.

## 5. Document Listing for Push V2.2

This section is normative.

Doc Ref	Permanent Document Reference	Description
<b>Requirement Document</b>		
[Push_RD]	OMA-RD-PushSecurity-V1_0-20050125-C	Push Requirements
<b>Architecture Document</b>		
[PushArch]	OMA-AD-Push-V2_2-20071002-C	Push Architecture
<b>Technical Specifications</b>		
[PPGService]	OMA-WAP-TS-PPGService-V2_1-20051122-C	Push Proxy Gateway Service Specification
[PushPAP]	OMA-WAP-TS-PAP-V2_2-20071002-C	Push Application Protocol (PAP) Specification
[PushOTA]	OMA-TS-PushOTA-V2_2-20071002-C	Push Over the Air (OTA) Specification
[PushMsg]	WAP-251-PushMessage-20010322-a	Push Message Specification Specification
[PushMO]	OMA-TS-Push-MO-V1_0-20071002-C	Push Management Object Specification
[PushSI]	WAP-167-ServiceInd-20010731-a	Push Service Indication Specification
	WAP-167_103-ServiceInd-20010926-a	Specification Information Note
[PushSL]	WAP-168-ServiceLoad-20010731-a	Push Service Load Specification
	WAP-168_103-ServiceLoad-20010816-a.	Specification Information Note
[PushCO]	WAP-175-CacheOp-20010731-a	Push Cache Operation Specification
	WAP-175_102-CacheOp-20010816-a	Specification Information Note
<b>Supporting Files</b>		
[Push_pap]	OMA-SUP-DTD_pap-V2_1-20051122-C	Push Access Protocol DTD Working file in DTD directory: file: pap_2.1.dtd path: <a href="http://www.openmobilealliance.org/tech/dtd/">http://www.openmobilealliance.org/tech/dtd/</a>
[Push_si]	OMA-SUP-DTD_si-V1_0-20051122-C	Service Indication DTD: Working file in DTD directory: file: si_1.0.dtd path: <a href="http://www.openmobilealliance.org/tech/dtd/">http://www.openmobilealliance.org/tech/dtd/</a>
[Push_sl]	OMA-SUP-DTD_sl-V1_0-20051122-C	Service Load DTD Working file in DTD directory: file: sl_1.0.dtd path: <a href="http://www.openmobilealliance.org/tech/dtd/">http://www.openmobilealliance.org/tech/dtd/</a>
[Push_co]	OMA-SUP-DTD_co-V1_0-20051122-C	Cache Operation DTD Working file in DTD directory: file: co_1.0.dtd path: <a href="http://www.openmobilealliance.org/tech/dtd/">http://www.openmobilealliance.org/tech/dtd/</a>
[Push_MO_push_DDF]	OMA-SUP-MO_Push_DDF-V1_0-20071002-C	Push Device Management Object Description DTD Working file in DTD directory: file: dm_ddf-v1_2.dtd path: <a href="http://www.openmobilealliance.org/tech/dtd/">http://www.openmobilealliance.org/tech/dtd/</a>

**Email Notification** [EMN] is managed under a separate enabler release, OMA Email Notification [EMNEnabler].

## 6. Minimum Functionality Description for Push

This section is informative.

The minimum functionality required for push service is divided into client and server requirements.

On the server side it is a minimum that the following is supported:

- Push Access Protocol, mandatory elements
- Push proxy gateway service mandatory service
- Service Indication content type
- Over the Air – Wireless Session Protocol Connectionless Push Service.

Connection-Orientated push, if supported on the server, must be either (or both) of the *OTA-WSP* type or the *OTA-HTTP* type as defined in [PushOTA].

On the client side it is a minimum that the following is supported:

- Service Indication content type
- Over the Air – Wireless Session Protocol Connectionless Push Service
- Support for ‘Whitelists’ as defined in section 8.3 [PushOTA]

Connection-Orientated push, if supported on the client, must be either (or both) of the *OTA-WSP* type or the *OTA-HTTP* type as defined in [PushOTA].

The changes between the previous definition of Push [Push2.1] are amendments to enhance the *security* of the push request and to address unwanted push messages at the Push Client. The push specifications have been enhanced to increase the number of verification steps that the client takes prior to processing or presenting a received push message. In addition there are additional parameters which have been added to the HTTP content type header in order that the push client can authenticate the source of the content received via push.

## 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 Push - Client Requirements

This section is normative.

Item	Feature / Application	Status	Requirement
OMA-ERDEF-Push-C-001	Push Client	M	[PushOTA]: MCF AND [PushMsg]: MCF AND [PushSI]: MCF

**Table 1 ERDEF for Push Client-side Requirements**

## 9. ERDEF for Push - Server Requirements

This section is normative.

Item	Feature / Application	Status	Requirement
OMA-ERDEF-Push-S-001	Push Server	M	[PAP]:MCF AND [PPGService]:MCF AND [PushOTA]: MCF AND [PushMsg]: MCF AND [PushSI]: MCF AND

**Table 2 ERDEF for Push Server-side Requirements**

## 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 2.2 History

Document Identifier	Date	Sections	Description
Draft Version: OMA-ERELED-Push-V1_0	14 July 2005		New Enabler for Push defined in OMA
Draft Version: OMA-ERELED-Push-V2.1	11 Oct 2005		Updated enabler after consistency review
Draft Versions: OMA-ERELED-Push-2_2	24 Apr 2006		Updated for Push Security
	03 Aug 2006		Updated for Push Security (device management object)
	10 Sept 2006		Updated for 1) Push SMS Operational guidelines 2) Push Management Object Specification
	14 Dec 2006		Updated to coincide with Push 2.2 OTA Specification
	05 Jul 2007	All	Application of the 2007 template after CONRR to align with 2007 ERP
	26 Jul 2007	6	Update document listing
Draft Versions: OMA-ERELED-Push-V2_2	02 Oct 2007	N/A	Status changed to Candidate by TP: TP ref # OMA-TP-2007-0296R01- INP_Push_V2_2_ERP_for_Candidate_Approval