Enabler Release Definition for IMPS

Candidate Version 1.3 – 11 Oct 2005

Open Mobile Alliance

OMA-ERELD-IMPS-V1_3-20051011-C

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1. Scope

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

2. References

2.1 Normative References

[IOPPROC] "OMA Interoperability Policy and Process", Version 1.1, Open Mobile Alliance™, OMA-IOP-Process-V1_1, 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

[Arch] "IMPS Architecture Version 1.3", OMA-AD-IMPS-Architecture-V1_3. Open Mobile Alliance™ URL: http://www.openmobilealliance.org

[CSP] "Client-Server Protocol Session and Transactions Version 1.3", OMA-TS-IMPS-CSP-V1_3. Open Mobile Alliance™. URL: http://www.openmobilealliance.org

[CSP DataType] "Client-Server Protocol Data Types Version 1.3", OMA-TS-IMPS-CSP_Data_Types-V1_3. Open Mobile Alliance™. URL: http://www.openmobilealliance.org

[CSP Trans] "Client-Server Protocol Transport Bindings Version 1.3", OMA-TS-IMPS-CSP_Transport-V1_3. Open Mobile Alliance™. URL: http://www.openmobilealliance.org

[CSP PTS] "Client-Server Protocol Plain Text Syntax Version 1.3", OMA-TS-IMPS-CSP_PTS-V1_3. Open Mobile Alliance™. URL: http://www.openmobilealliance.org

[CSP XMLS] "Client-Server Protocol XML Syntax Version 1.3", OMA-TS-IMPS-CSP-XMLS-V1_3. Open Mobile Alliance™. URL: http://www.openmobilealliance.org

[CSP WBXML] "Client-Server Protocol Binary XML Definition and Examples Version 1.3", OMA-TS-IMPS-CSP_WBXML-V1_3. Open Mobile Alliance™. URL: http://www.openmobilealliance.org

[PA] "Presence Attributes Version 1.3", OMA-TS-IMPS-PA-V1_3. Open Mobile Alliance™. URL: http://www.openmobilealliance.org

[PA XMLS] "Presence Attributes XML Syntax Version 1.3", OMA-TS-IMPS-PA_XMLS-V1_3. Open Mobile Alliance™. URL:http://www.openmobilealliance.org

[SSP] "Server-Server Protocol Semantics Document Version 1.3", OMA-TS-IMPS-SSP-V1_3. Open Mobile Alliance™. URL: http://www.openmobilealliance.org

[SSP XMLS] "Server-Server Protocol XML Syntax Document Version 1.3", OMA-TS-IMPS-SSP_XMLS-V1_3. Open Mobile Alliance™. URL: http://www.openmobilealliance.org

[SSP Trans] "Server-Server Protocol Transport Binding Version 1.3", OMA-TS-IMPS-SSP_Transport-V1_3. Open Mobile Alliance™. URL: http://www.openmobilealliance.org

2.2 Informative References

None.

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

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.

3.3 Abbreviations

OMA	Open Mobile Alliance
WV	Wireless Village
CSP	Client-Server Protocol
SSP	Server-Server Protocol
MCN	Mobile Core Network
IM&P	Instant Messaging and Presence
IMPS	Instant Messaging and Presence Services
SMCNP	Server to Mobile Core Network Protocol
ERELD	Enabler Release Definition

4. Introduction

IMPS is an OMA Enabler that is designed for exchanging messages and presence information not only between mobile clients, but also, between mobile and fixed clients. The origins of this enabler lie in the Wireless Village initiative. The Wireless Village organization and its version 1.1 specifications have been incorporated into OMA. The 1.1 specifications are the basis of the OMA 1.2 enabler. The IMPS 1.3 enabler is a significant enhancement of the IMPS 1.2 enabler and is not designed to be backwardly compatible with previous IMPS versions.

This document outlines the Enabler Release Definition for IMPS and the respective conformance requirements for client and server implementations claiming compliance to it as defined by Open Mobile Alliance across the specification baseline.

5. Enabler Release Specification Baseline (Normative)

Document Number	Description	Version
OMA-AD-IMPS-Architecture-V1_3-20050829-D	IMPS Architecture	V1.3
OMA-TS-IMPS-CSP-V1_3-20050916-D	Client-Server Protocol Session and Transactions	V1.3
OMA-TS-IMPS-CSP-XMLS-V1_3-20050920-D	Client-Server Protocol XML Syntax	V1.3
OMA-TS-IMPS-CSP_Transport-V1_3-20050825-D	Client-Server Protocol Transport Bindings	V1.3
OMA-TS-IMPS-CSP_Data_Types-V1_3-20050920-D	Client-Server Protocol Data Types	V1.3
OMA-TS-IMPS-CSP_PTS-V1_3-20050920-D	Client-Server Protocol Plain Text Syntax	V1.3
OMA-TS-IMPS-CSP_WBXML-V1_3-20050920-D	Client-Server Protocol Binary XML Definition and Examples	V1.3
OMA-TS-IMPS-PA-V1_3-20050826-D	Presence Attributes	V1.3
OMA-TS-IMPS-PA_XMLS-V1_3-20050826-D	Presence Attributes XML Syntax	V1.3
OMA-RD_IMPSDelta-V1_3-20041118-C	OMA IMPS Delta Requirements	V1.3
OMA-TS-IMPS-SSP-V1_3-20050916-D	Server-Server Protocol Semantics Document	V1.3
OMA-TS-IMPS-SSP_XMLS-V1_3-20050916-D	Server-Server Protocol XML Syntax Document	V1.3
OMA-TS-IMPS-SSP_Transport-V1_3-20050826-D	Server-Server Protocol Transport Binding	V1.3
OMA-TS-wA-Application-Characteristic-for-IMPS-V1_0-20050727-D	Application Characteristic for IMPS	V1.0
OMA-TS-IMPS-MO-V1_0-20050825-D	Management Object	V1.0
OMA-ETR-IMPS-V1_3-20050909-D	Enabler Test Requirements	V1.3

Table 1: Enabler Release Specification Baseline

6. Minimum Functionality Description for IMPS (Informative)

IMPS is an OMA Enabler that is designed for exchanging messages and presence information not only between mobile clients, but also, between mobile and fixed clients. In this section, references to [Arch] are used to provide the basic functional description of the IMPS service enabler.

6.1 IMPS Server

The IMPS Server is the central point in an IMPS system, its functional elements are illustrated in Figure 1. It is composed of four Application Service Elements that are accessible via the Service Access Point. The Application Service Elements are:

1. Presence Service Element
2. Instant Messaging Service Element
3. Group Service Element
4. Content Service Element

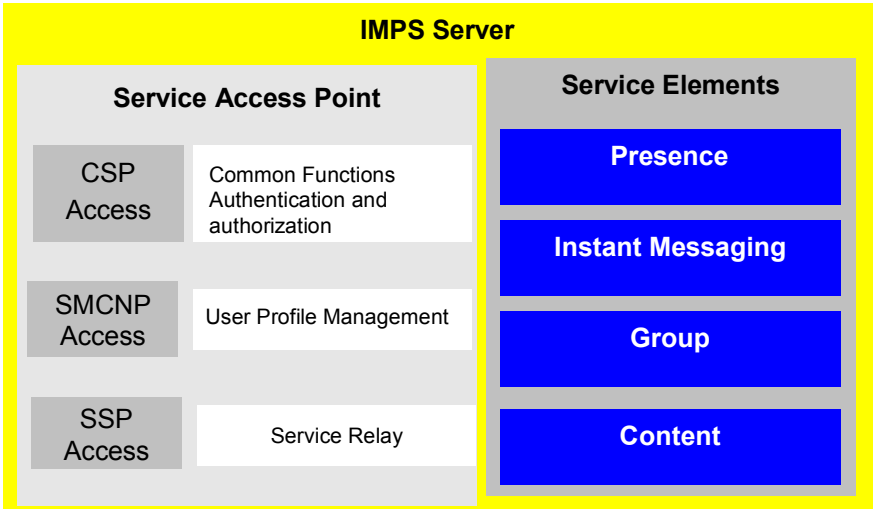

Figure 1: Functional Elements of IMPS Server

6.1.1 Presence Service Element

The Presence Service Element provides functionality for presence information management. This includes update, retrieve, set and store presence and location information. Presence information can be manipulated implicitly by the system, or explicitly by the user.

A user can subscribe to receive the presence information of other users, as specified in a contact list. Contact List Management is also a part of the presence service.

Presence information can be obtained from different internal and external sources. Through the Service Access Point (described below) the Presence Service Element can connect to the Mobile Core Network to access network presence and service information. Network presence defines the properties of the mobile devices, as well as the underlying network functionality. The Network service features define the properties related to the wireless devices on the wireless network, and determine the ability to communicate with a particular wireless device.

6.1.2 Instant Messaging Service Element

The Instant Messaging Service Element provides functionality for sending and receiving instant messages. An instant message may be sent to, or received from, a specific IMPS-user, or users of other instant messaging systems. It is also

possible to send instant messages to a group of IMPS-users. IMPS supports several message types such as plain text, video, picture and sound.

6.1.3 Group Service Element

The Group Service Element provides functionality for use and management of groups. The groups can be private or public. A common usage of the Group Service is a chat room. It is also possible to bind content to the Groups.

6.1.4 Content Service Element

The Content Service Element provides functionality for sharing content such as images and documents between IMPS users. The shared content feature allows the IMPS users to share content while sending messages or chatting in a group. In this IMPS enabler, the shared content is realized by allowing a user to send a URL of the content he or she is willing to share. There are no mechanisms to upload or download content (see also section B.4 of Appendix B).

6.1.5 Service Access Point

The Service Access Point (SAP) serves as the interface between the IMPS server and its environment. It has interfaces to the IMPS clients, other IMPS servers, the Mobile Core Network and Proprietary Gateways to non-IMPS servers.

The functionality of the Service Access Point is:

- Authentication and Authorization
- Service Discovery and Service Agreement
- User Profile Management
- Service Relay

Some potentially useful functions, such as a service administration and monitoring interface, a provisioning interface, and a billing interface, etc., are subject to service deployment. Those functions are outside the scope of the standard and will not be addressed within IMPS specifications.

6.1.5.1 Authentication and Authorization

Authentication is used to verify the identity of an entity (user, network, or application). Authorization is the activity of determining what an authenticated entity (user, network, or application) is allowed to do.

There are several types of mechanisms for authentication and authorization:

- Application-Network Authentication / Authorization.
- User-Application Authentication / Authorization.
- Application-Application Authentication / Authorization
- User-Network Authentication (only for Authentication)

6.1.5.2 Service Discovery and Service Agreement

Service Discovery enables the application to identify the collection of service capability features that it can use. The service discovery process includes service capability registration and service capability notification. This is done both between Client – Server and Server –Server.

A **Service Agreement** (also known as a Service negotiation) must be established before the server can interact with the Network Service Capability or other servers' service capabilities, and provides the client with the services.

Upon successful agreement, the server may obtain information about the network capability and service capability features. The client may obtain the service capability features provided by the server. The services include the network services and IMPS services (presence service, IM service, group service and shared content service).

6.1.5.3 User Profile Management

One or more User Profile(s) describe(s) how the user wishes to manage and interact with their communication services (Figure 2). The User Profile information consists of various user interfaces and service related information including the list of services to which the end-user is subscribed, preferences associated with those services, service status (active /

inactive), privacy status with regards to network service capabilities (e.g. user location, user interaction), terminal capabilities and terminal interface preferences etc.

User Profile Management allows the application to retrieve and update the user profile.

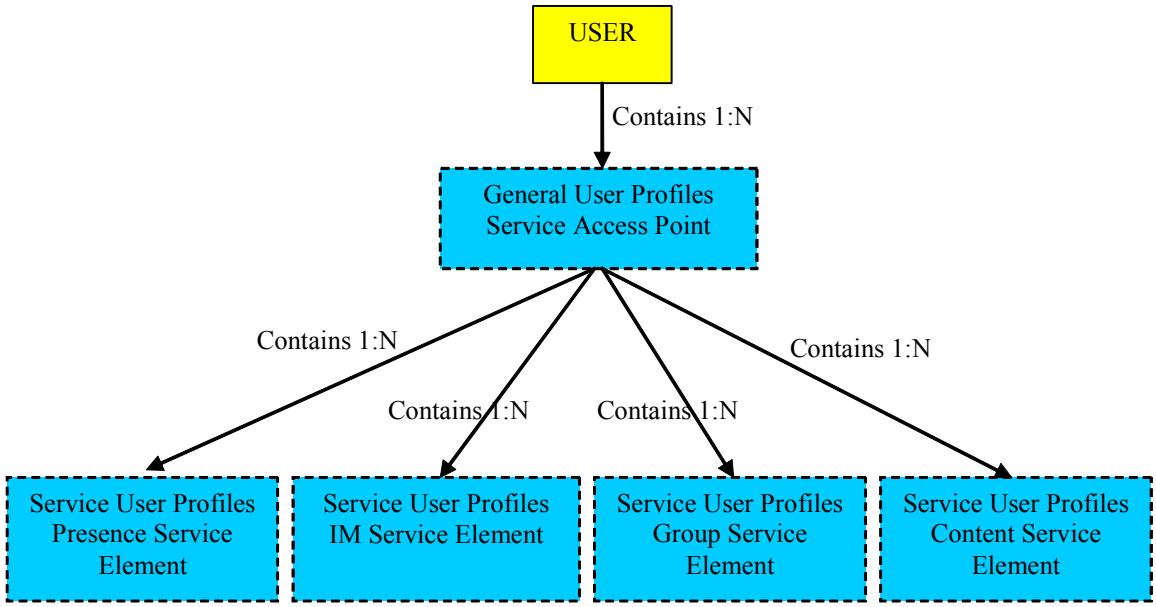

Figure 2: User profiles

6.1.5.4 Service Relay

The Service Access Point must provide the Service Relay function to route all service requests and responses among the servers using the Server-to-Server Protocol (SSP). The Service Relay requires that the SAP performs CSP to SSP conversion and may have to transcode the contents of a service request and response.

6.1.6 IMPS Client

The IMPS client includes but is not limited to mobile hand-held and fixed terminals. IMPS clients will be interoperable with each other via SAP using the Client Server Protocol.

6.1.7 Interfaces and protocols

IMPS is a bearer-independent enabler, where different bindings can be defined between the IMPS-specific application protocols and other underlying protocols, as shown in Figure 3. CSP and SSP are the IMPS-specific application protocols.

CSP provides access for IMPS Clients within mobile and desktop terminals to the IMPS Server. CSP can use different transport bearers depending on the capability of the client. The transport-layer in IMPS can be supported via either HTTP or WSP/WTP, whereas secure transport can be provided using TLS, WTLS or IPSec protocols.

SSP connects IMPS servers. This can be used within one service provider domain or between different service providers. In this way the system will be interoperable so that a user that subscribes to IMPS services at Service Provider A can communicate with a user that is a customer of Service Provider B. The SSP is also used when connecting an IMPS server to Proprietary IMPS service via a Proprietary Gateway.

IMPS bearers for CSP include SMS, 2.5G/3G wireless IP or Mobile IP, but, when CSP is transported over SMS, other transport or security protocols are not needed. Instead a fixed IP connectivity is generally used as a bearer for SSP.

The Server to Mobile Core Network Protocol (SMCNP) is a reference point between the IMPS server and the underlying mobile networks. The SMCNP is implementation-dependent and not specified in this enabler.

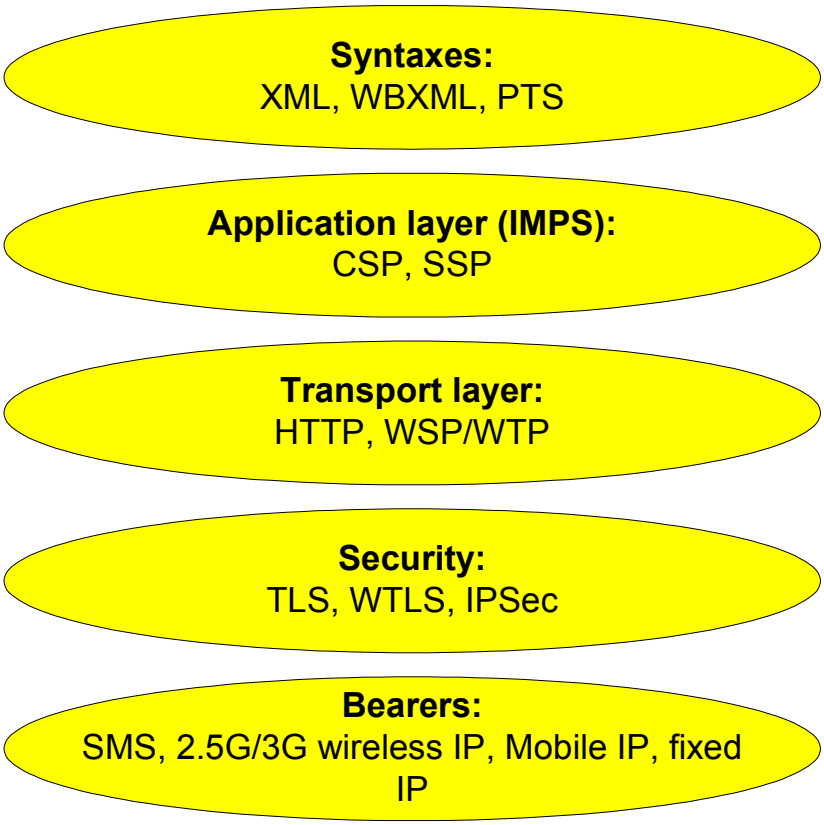

Figure 3: Interfaces and protocols

7. Conformance Requirements Notation Details (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 IMPS – Client Requirements (Normative)

Item	Feature / Application	Status	Requirement
OMA-ERDEF-IMPS-C-001	Client-Server Protocol Session and Transactions	M	OMA-TS-IMPS-CSP-1_3:MCF AND (OMA-ERDEF-IMPS-C-005 OR OMA-ERDEF-IMPS-C-006 OR OMA-ERDEF-IMPS-C-007)
OMA-ERDEF-IMPS-C-002	Client-Server Protocol Session and Transactions	O	OMA-TS-IMPS-CSP-1_3:OCF
OMA-ERDEF-IMPS-C-003	Client-Server Protocol Transport Bindings	M	OMA-TS-IMPS-CSP-Transport-1_3:MCF
OMA-ERDEF-IMPS-C-004	Client-Server Protocol Transport Bindings	O	OMA-TS-IMPS-CSP-Transport-1_3:OCF
OMA-ERDEF-IMPS-C-005	Client-Server Protocol XML Syntax	O	OMA-TS-IMPS-CSP-XMLS-V1_3:MCF
OMA-ERDEF-IMPS-C-006	Client-Server Protocol Binary XML Definition and Examples	O	OMA-TS-IMPS-CSP_WBXML-V1_3:MCF
OMA-ERDEF-IMPS-C-007	Client-Server Protocol Plain Text Syntax	O	OMA-TS-IMPS-CSP_PTS-V1_3:MCF
OMA-ERDEF-IMPS-C-008	Presence Attributes	O	OMA-TS-IMPS-PA-V1_3:MCF AND OMA-ERDEF-IMPS-C-001
OMA-ERDEF-IMPS-C-009	Presence Attributes	O	OMA-TS-IMPS-PA-V1_3:OCF AND OMA-ERDEF-IMPS-C-008
OMA-ERDEF-IMPS-C-010	Presence Attributes XML Syntax	O	OMA-TS-IMPS-PA_XMLS-1_3:MCF AND (OMA-ERDEF-IMPS-C-008 OR OMA-ERDEF-IMPS-C-009)

Table 2: ERDEF for IMPS Client-side Requirements

9. ERDEF for IMPS – Server Requirements (Normative)

Item	Feature / Application	Status	Requirement
OMA-ERDEF-IMPS-S-001	Client-Server Protocol Session and Transactions	O	OMA-TS-IMPS-CSP-1_3:MSF AND (OMA-ERDEF-IMPS-S-003 OR OMA-ERDEF-IMPS-S-004) AND OMA-ERDEF-IMPS-S-006 AND (OMA-ERDEF-IMPS-S-005 OR OMA-ERDEF-IMPS-C-007)
OMA-ERDEF-IMPS-S-002	Client-Server Protocol Session and Transactions	O	OMA-TS-IMPS-CSP-1_3:OSF AND OMA-ERDEF-IMPS-S-001
OMA-ERDEF-IMPS-S-003	Client-Server Protocol Transport Bindings	O	OMA-TS-IMPS-CSP-Transport-1_3:MSF AND (OMA-ERDEF-IMPS-S-001 OR OMA-ERDEF-IMPS-S-002)
OMA-ERDEF-IMPS-S-004	Client-Server Protocol Transport Bindings	O	OMA-TS-IMPS-CSP-Transport-1_3:OSF AND OMA-ERDEF-IMPS-S-003 AND (OMA-ERDEF-IMPS-S-001 OR OMA-ERDEF-IMPS-S-002)
OMA-ERDEF-IMPS-S-005	Client-Server Protocol XML Syntax	O	OMA-TS-IMPS-CSP-XMLS-V1_3:MSF AND (OMA-ERDEF-IMPS-S-001 OR OMA-ERDEF-IMPS-S-002)
OMA-ERDEF-IMPS-S-006	Client-Server Protocol Binary XML Definition and Examples	O	OMA-TS-IMPS-CSP_WBXML-V1_3:MSCF AND (OMA-ERDEF-IMPS-S-001 OR OMA-ERDEF-IMPS-S-002)
OMA-ERDEF-IMPS-S-007	Client-Server Protocol Plain Text Syntax	O	OMA-TS-IMPS-CSP_PTS-V1_3:MSF AND (OMA-ERDEF-IMPS-S-001 OR OMA-ERDEF-IMPS-S-002)
OMA-ERDEF-IMPS-S-008	Presence Attributes	O	OMA-TS-IMPS-PA-V1_3:MSF AND (OMA-ERDEF-IMPS-S-001 OR OMA-ERDEF-IMPS-S-002 OR OMA-ERDEF-IMPS-S-011 OR OMA-ERDEF-IMPS-S-012)
OMA-ERDEF-IMPS-S-009	Presence Attributes	O	OMA-TS-IMPS-PA-V1_3:OSF AND OMA-ERDEF-IMPS-S-008
OMA-ERDEF-IMPS-S-010	Presence Attributes XML Syntax	O	OMA-TS-IMPS-PA_XMLS-1_3:MSF AND (OMA-ERDEF-IMPS-S-008 OR OMA-ERDEF-IMPS-S-009)
OMA-ERDEF-IMPS-S-011	Server-Server Protocol Semantics	O	OMA-TS-IMPS-SSP-V1_3:MSF AND OMA-ERDEF-IMPS-S-013 AND (OMA-ERDEF-IMPS-S-014 OR OMA-ERDEF-IMPS-S-015)
OMA-ERDEF-IMPS-S-012	Server-Server Protocol Semantics	O	OMA-TS-IMPS-SSP-V1_3:OSF AND OMA-ERDEF-IMPS-S-011
OMA-ERDEF-IMPS-S-013	Server-Server Protocol XML Syntax	O	OMA-TS-IMPS-SSP_XMLS-V1_3:MSF AND (OMA-ERDEF-IMPS-S-011 OR OMA-ERDEF-IMPS-S-012)
OMA-ERDEF-IMPS-S-014	Server-Server Protocol Transport binding	O	OMA-TS-IMPS-SSP_Transport-V1_3:MSF AND (OMA-ERDEF-IMPS-S-011 OR OMA-ERDEF-IMPS-S-012)

Item	Feature / Application	Status	Requirement
OMA-ERDEF-IMPS-S-015	Server-Server Protocol Transport binding	O	OMA-TS-IMPS-SSP_Transport-V1_3:OSF AND OMA-ERDEF-IMPS-S-014)
OMA-ERDEF-IMPS-S-016	IMPS server	M	(OMA-ERDEF-IMPS-S-017 OR OMA-ERDEF-IMPS-S-018 OR OMA-ERDEF-IMPS-S-019 OR OMA-ERDEF-IMPS-S-020)
OMA-ERDEF-IMPS-S-017	IMPS server serving directly only clients	O	OMA-ERDEF-IMPS-S-001 OR OMA-ERDEF-IMPS-S-002
OMA-ERDEF-IMPS-S-018	IMPS server serving directly only servers	O	OMA-ERDEF-IMPS-S-011 OR OMA-ERDEF-IMPS-S-012
OMA-ERDEF-IMPS-S-019	IMPS server serving directly both clients and servers	O	(OMA-ERDEF-IMPS-S-001 OR OMA-ERDEF-IMPS-S-002) AND (OMA-ERDEF-IMPS-S-011 OR OMA-ERDEF-IMPS-S-012)
OMA-ERDEF-IMPS-S-020	Service relay	O	(OMA-ERDEF-IMPS-S-001 OR OMA-ERDEF-IMPS-S-002 OR OMA-ERDEF-IMPS-S-011 OR OMA-ERDEF-IMPS-S-012)

Table 3: ERDEF for IMPS Server-side Requirements

Appendix A. Change History (Informative)

A.1 Approved Version History

Reference	Date	Description
n/a	n/a	No prior version

A.2 Draft/Candidate Version 1.3 History

Document Identifier	Date	Sections	Description
Draft Versions OMA-ERELD-IMPS-V1_3	31 Mar 2005	All	First Draft
	22 Apr 2005	All	Applied newest template. Updated references. Updated chapter 5.
	24 Apr 2005	8, 9	Added approved CRs: OMA-IM-2005-0297R01-IMPS13_ERELDUpdate_ERELD
	9 Apr 2005	All	Updated according to consistency report
	11 Aug 2005	All	Updated according to accepted CRs: OMA-IM-2005-0335-CONRR_Correction_ERELD OMA-IM-2005-0347R01-IMPS1_3-CONRR-Editorial-Sections4-6 OMA-IM-2005-0357-IMPS13-ArchRef-ERELD OMA-IM-2005-0379-IMSP13_ERELDUpdate-ERELD OMA-IM-2005-0562-Ereld_Updates
	25 Aug 2005	All	IOP-IMPS suggestions, inconsistency comments via mail.
	07 Sep 2005	All	Typo corrections. Added missing references. Corrected requirements in chapter 8 and 9. Updated Figure 3 – now it's consistent with Architecture document.
Candidate Versions OMA-ERELD-IMPS-V1_3	11 Oct 2005	n/a	Status changed to Candidate by TP TP ref # OMA-TP-2005-0279R01-IMPS-V1_3-for-Candidate-approval