



# Enabler Release Definition for Converged Personal Network Service

Approved Version 1.0 – 23 Oct 2012

---

**Open Mobile Alliance**  
OMA-ERELED-CPNS-V1\_0-20121023-A

Use of this document is subject to all of the terms and conditions of the Use Agreement located at <http://www.openmobilealliance.org/UseAgreement.html>.

Unless this document is clearly designated as an approved specification, this document is a work in process, is not an approved Open Mobile Alliance™ specification, and is subject to revision or removal without notice.

You may use this document or any part of the document for internal or educational purposes only, provided you do not modify, edit or take out of context the information in this document in any manner. Information contained in this document may be used, at your sole risk, for any purposes. You may not use this document in any other manner without the prior written permission of the Open Mobile Alliance. The Open Mobile Alliance authorizes you to copy this document, provided that you retain all copyright and other proprietary notices contained in the original materials on any copies of the materials and that you comply strictly with these terms. This copyright permission does not constitute an endorsement of the products or services. The Open Mobile Alliance assumes no responsibility for errors or omissions in this document.

Each Open Mobile Alliance member has agreed to use reasonable endeavors to inform the Open Mobile Alliance in a timely manner of Essential IPR as it becomes aware that the Essential IPR is related to the prepared or published specification. However, the members do not have an obligation to conduct IPR searches. The declared Essential IPR is publicly available to members and non-members of the Open Mobile Alliance and may be found on the “OMA IPR Declarations” list at <http://www.openmobilealliance.org/ipr.html>. The Open Mobile Alliance has not conducted an independent IPR review of this document and the information contained herein, and makes no representations or warranties regarding third party IPR, including without limitation patents, copyrights or trade secret rights. This document may contain inventions for which you must obtain licenses from third parties before making, using or selling the inventions. Defined terms above are set forth in the schedule to the Open Mobile Alliance Application Form.

NO REPRESENTATIONS OR WARRANTIES (WHETHER EXPRESS OR IMPLIED) ARE MADE BY THE OPEN MOBILE ALLIANCE OR ANY OPEN MOBILE ALLIANCE MEMBER OR ITS AFFILIATES REGARDING ANY OF THE IPR'S REPRESENTED ON THE “OMA IPR DECLARATIONS” LIST, INCLUDING, BUT NOT LIMITED TO THE ACCURACY, COMPLETENESS, VALIDITY OR RELEVANCE OF THE INFORMATION OR WHETHER OR NOT SUCH RIGHTS ARE ESSENTIAL OR NON-ESSENTIAL.

THE OPEN MOBILE ALLIANCE IS NOT LIABLE FOR AND HEREBY DISCLAIMS ANY DIRECT, INDIRECT, PUNITIVE, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES ARISING OUT OF OR IN CONNECTION WITH THE USE OF DOCUMENTS AND THE INFORMATION CONTAINED IN THE DOCUMENTS.

© 2012 Open Mobile Alliance Ltd. All Rights Reserved.

Used with the permission of the Open Mobile Alliance Ltd. under the terms set forth above.

# Contents

|  |    |
|--|----|
| 1. SCOPE.....                                      | 4  |
| 2. REFERENCES .....                                | 5  |
| 2.1 NORMATIVE REFERENCES .....                     | 5  |
| 2.2 INFORMATIVE REFERENCES .....                   | 6  |
| 3. TERMINOLOGY AND CONVENTIONS.....                | 7  |
| 3.1 CONVENTIONS .....                              | 7  |
| 3.2 DEFINITIONS.....                               | 7  |
| 3.3 ABBREVIATIONS .....                            | 9  |
| 4. RELEASE VERSION OVERVIEW .....                  | 10 |
| 4.1 VERSION 1.0 FUNCTIONALITY .....                | 10 |
| 5. DOCUMENT LISTING FOR CPNS V1.0 .....            | 11 |
| 6. OMNA CONSIDERATIONS .....                       | 12 |
| 7. CONFORMANCE REQUIREMENTS NOTATION DETAILS ..... | 13 |
| 8. ERDEF FOR CPNS - CLIENT REQUIREMENTS.....       | 14 |
| 9. ERDEF FOR CPNS - SERVER REQUIREMENTS .....      | 15 |
| APPENDIX A. CHANGE HISTORY (INFORMATIVE).....      | 16 |
| A.1 APPROVED VERSION HISTORY .....                 | 16 |

# 1. Scope

The scope of this document is limited to the Enabler Release Definition of Converged Personal Network Service (CPNS) enabler according to OMA Release process and the Enabler Release specification baseline listed in section 5.

The CPNS Enabler enables CPNS entities in a personal network (PN) to consume services within that PN, services from and to other PNs, and services provided by service providers outside the PN.

## 2. References

### 2.1 Normative References

- [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)
- [SCRRULES] "SCR Rules and Procedures", Open Mobile Alliance™, OMA-ORG-SCR\_Rules\_and\_Procedures, [URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [CPNS\_RD] "Converged Personal Network Service Requirements", Open Mobile Alliance™, OMA-RD-CPNS-V1\_0, [URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [CPNS\_AD] "Converged Personal Network Service Architecture", Open Mobile Alliance™, OMA-AD-CPNS-V1\_0, [URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)

## 2.2 Informative References

- [OMADICT] “Dictionary for OMA Specifications”, Version 2.7, Open Mobile Alliance™, OMA-ORG-Dictionary-V2\_7, [URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [OMA – CPNS] Converged Personal Network Service (CPNS) BoF - 27 Mar 2008  
URL: <http://www.openmobilealliance.org/>
- [OMA – Presence] “Presence”, Open Mobile Alliance™, OMA-TS-Presence\_SIMPLE-V2\_0-20081223-C  
URL: <http://www.openmobilealliance.org/>
- [OMA – Privacy] “Privacy”, Open Mobile Alliance™, OMA-RRP-Privacy-V1\_0-20070807-A  
URL: <http://www.openmobilealliance.org/>
- [3GPP TS 22.004] 3GPP TS 22.004 V8.0.0 (2006-12) "General on supplementary services (Release 8)"
- [3GPP TR 21.905] "Vocabulary for 3GPP Specifications"  
E.g. 3GPP TR 21.905 (Release 9)  
<http://www.3gpp.org/ftp/Specs/html-info/21905.htm>
- [3GPP TR 22.944] "Report on service requirements for UE functionality split".  
E.g. 3GPP TS 22.994 (Release 8)  
<http://www.3gpp.org/ftp/Specs/html-info/22004.htm>
- [3GPP TS 22.004] "General on supplementary services"  
E.g. 3GPP TS 22.004 (Release 8)  
<http://www.3gpp.org/ftp/Specs/html-info/22004.htm>
- [3GPP TS 22.101] "Service aspects; Service principles"  
E.g. 3GPP TS 22.101 (Release 9)  
<http://www.3gpp.org/ftp/Specs/html-info/22101.htm>
- [3GPP TS 22.105] "Service aspects; Services and service capabilities"  
E.g. 3GPP TS 22.105 (Release 9)  
<http://www.3gpp.org/ftp/Specs/html-info/22105.htm>
- [3GPP TS 22.259] “Service requirements for Personal Network Management (PNM); Stage 1”  
E.g. 3GPP TS 22.259 (Release 9)  
<http://www.3gpp.org/ftp/Specs/html-info/22259.htm>
- [3GPP TS 23.259] “Personal Network Management (PNM); Procedures and information flows”  
E.g. 3GPP TS 23.259 (Release 9)  
<http://www.3gpp.org/ftp/Specs/html-info/23259.htm>
- [3GPP TS 24.259] Personal Network Management (PNM); Stage 3  
E.g. 3GPP TS 24.259 (Release 8)  
<http://www.3gpp.org/ftp/Specs/html-info/24259.htm>

## 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 [SCRRULES].

### 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>CPNS Device</b>                       | A Device [OMADICT] which can operate in different Modes simultaneously in the Personal Network. CPNS Devices are assumed to have capabilities to process, store and/or render content, as well as to have communication interfaces that enable them to perform in different Modes in Personal Networks.   |
| <b>CPNS Server</b>                       | Is a functional entity that provides resources to CPNS entities either in response to requests or in a Push mode. In addition, it interacts with other external entities, such as Content Provider Server etc., for the purpose of service provisioning.  |
| <b>CPNS User</b>                         | The CPNS User is the person who uses CPNS Service using PNE(s)  |
| <b>External Entity</b>                   | An entity not specified by the CPNS Enabler   |
| <b>Mode</b>                              | There are three identified Modes for CPNS Devices: PN GW, CPNS Server and PNE. The Modes CPNS Devices can operate in depend on their capabilities.  |
| <b>Overlay Network</b>                   | A virtual network which is built on top of an existing underlying network. Nodes in an Overlay Network can reach each other through multiple physical or logical links in the underlying network.   |
| <b>PAN</b>                               | Personal Area Network   |
| <b>Peer-to-Peer Network</b>              | A network of connected PNE(s) where: <ul style="list-style-type: none"> <li>• The PNE(s) form an Overlay Network, and</li> <li>• The process of establishing and maintaining connectivity between PNE(s) is handled mainly by the PNE(s) themselves, and</li> <li>• The PNE(s) can both offer and receive Services.</li> </ul>  |
| <b>Personal Network (PN)</b>             | A collection of devices available to a CPNS User to consume and produce Services. All devices within a PN can be linked to a PN GW. A PN is a non-static collection and will vary over time. A PN consists at a minimum of a device acting in PN GW mode and another device acting in PNE mode.   |
| <b>Personal Network Element (PNE)</b>    | A functional entity making up a Personal Network. It may be used either to consume or provide content and/or Services (simultaneously or separately).   |
| <b>Personal Network Gateway (PN GW)</b>  | A functional entity which by interconnecting entities that reside in personal networks and wide area networks, instantiates a converged network that provides CPNS services. A PN GW at the device level enables a PNE to connect to a CPNS Server as well as other PNE in a same or another PN. This implies using a global network, such as a mobile network. At the service level, the PN GW manages the service access to and from PNEs, and the communication of capabilities information and statistics to the CPNS Server. |
| <b>PN Inventory</b>                      | List of PN(s) and devices belonging to a PN or multiple PNs   |

**Service**

See [OMA-DICT]

A selection from the portfolio of offerings made available by a Service Provider.



### 3.3 Abbreviations

|              |                                    |
|--------------|------------------------------------|
| <b>ERDEF</b> | Enabler Requirement Definition     |
| <b>ERELD</b> | Enabler Release Definition         |
| <b>OMA</b>   | Open Mobile Alliance               |
| <b>OMNA</b>  | Open Mobile Naming Authority       |
| <b>CPNS</b>  | Converged Personal Network Service |
| <b>ME</b>    | Mobile Equipment                   |
| <b>MT</b>    | Mobile Termination                 |
| <b>OMA</b>   | Open Mobile Alliance               |
| <b>PLMN</b>  | Public Land Mobile Network         |
| <b>PNE</b>   | Personal Network Element           |
| <b>PNM</b>   | Personal Network Management        |
| <b>TE</b>    | Terminal Equipment                 |
| <b>UE</b>    | User Equipment                     |
| <b>USIM</b>  | User Secure Identity Module        |

## 4. Release Version Overview

This document outlines the Enabler Release Definition for Converged Personal Network Service (CPNS) enabler 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 goal of the OMA Converged Personal Network Services (CPNS) enabler is to provide application-layer support for ubiquitous access to Services in a *converged network*, which is a collection of individual networks that are interconnected by means of *PN Gateway* (PN GW) devices.

The CPNS Enabler facilitates access by devices in a PN to application or content Services that are available either locally in one or more other PNE(s), or residing in other networks, including other PNs or network elements accessed via a cellular or other WAN technology. The main objective of the enabler is to allow the PNE(s) that are part of the PN to access Services outside of the PN and for those PNE(s) to offer Services to PNE(s) in other networks. The CPNS Enabler provides a wide range of functionality to support converged-network Services, including (but not limited to) end-to-end management of Service sessions, Service publication and discovery, tailoring of Service characteristics based on PNE capabilities, remote management of PNE configuration data and firmware/software, collection of CPNS usage statistics, security and charging.

The main CPNS enabler entities are:

- CPNS Server
- PN GW
- PNE

CPNS Server is an entity of CPNS enabler that replies to requests from PN GW and ensures that the appropriate application is selected and appropriate content is provided to the PNEs

PN GW serves as an intermediary entity between the PNE(s) and other networks that forwards the requests from the PNE(s) to the other networks and the other way around

PNE(s) are PN entities that are connected to the PN GW and between each other and are used for rendering the content received from the PN GW or from each other. PNE(s) can also offer content and other Services to PNE(s) in the same PN and to entities in other networks.

### 4.1 Version 1.0 Functionality

This enabler considers the interfaces and interactions between the key entities of the CPNS enabler.

The CPNS enabler will support both the PN-to-cellular/WAN model and the Peer-to-peer model.

## 5. Document Listing for CPNS V1.0

This section is normative.

| Doc Ref                         | Permanent Document Reference     | Description  |
|---------------------------------|----------------------------------|--|
| <b>Requirement Document</b>     |                                  |  |
| [CPNS_RD]                       | OMA-RD-CPNS-V1_0-20121023-A      | Requirements for Converged Personal Network Service enabler            |
| <b>Architecture Document</b>    |                                  |  |
| [CPNS_AD]                       | OMA-AD-CPNS-V1_0-20121023-A      | Architecture for Converged Personal Network Service enabler            |
| <b>Technical Specifications</b> |                                  |  |
| [CPNS_TS]                       | OMA-TS-CPNS_Core-V1_0-20121023-A | Technical Specification for Converged Personal Network Service enabler |
| <b>Supporting Files</b>         |                                  |  |
|                                 |                                  |  |
|                                 |                                  |  |

## 6. OMNA Considerations

## 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 [SCRRULES].
- Feature/Application:** Entry in this column **SHOULD** be a short descriptive label to the **Item** in question.
- Requirement:** Expression in the column **MUST** be a valid `TerminalExpression` according to [SCRRULES] and it **MUST** accurately reflect the architectural requirement of the **Item** in question.

## 8. ERDEF for CPNS - Client Requirements

This section is normative.

| Item                         | Feature / Application | Requirement |
|------------------------------|-----------------------|-------------|
| OMA-ERDEF-CPNS-C-001-<<M/O>> | CPNS Client           |             |
|                              |                       |             |

**Table 1: ERDEF for CPNS Client-side Requirements**

## 9. ERDEF for CPNS - Server Requirements

This section is normative.

| Item                         | Feature / Application | Requirement |
|------------------------------|-----------------------|-------------|
| OMA-ERDEF-CPNS-S-001-<<M/O>> | CPNS Server           |             |
|                              |                       |             |

**Table 2: ERDEF for CPNS Server-side Requirements**

## Appendix A. Change History

(Informative)

### A.1 Approved Version History

| Reference                                | Date        | Description  |
|--|-------------|--|
| Approved Version<br>OMA-ERELED-CPNS-V1_0 | 23 Oct 2012 | Status changed to Approved by TP:<br>TP ref#: OMA-TP-2012-0390-INP_CPNS_1_0_ERP_for_notification.zip |