



# **Enabler Release Definition for Open Connection Manager API**

Candidate Version 1.0 – 12 Jul 2011

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**Open Mobile Alliance**  
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# 1. Scope

The scope of this document is limited to the Enabler Release Definition of the Open Connection Manager API (OpenCMAPI) Enabler according to OMA Release process and the Enabler Release specification baseline listed in section 5.

## 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/)

### 2.2 Informative References

- [OMADICT] “Dictionary for OMA Specifications”, Version x.y, Open Mobile Alliance™,  
OMA-ORG-Dictionary-Vx\_y, [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”, "Release Version Overview" and “Conformance Requirements Notation Details”, 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.

### 3.3 Abbreviations

<b>3GPP</b>	3rd Generation Partnership Project
<b>3GPP2</b>	3rd Generation Partnership Project 2
<b>AKA</b>	Authentication and Key Agreement
<b>API</b>	Application Programming Interface
<b>APN</b>	Access Point Name
<b>CDMA</b>	Code Division Multiple Access
<b>CHAP</b>	Challenge Handshake Authentication Protocol
<b>CM</b>	Connection Manager
<b>CSIM</b>	CDMA2000 Subscriber Identity Module
<b>DM</b>	Device Management
<b>DNS</b>	Domain Name System
<b>EAP</b>	Extensible Authentication Protocol
<b>EDGE</b>	Enhanced Data rates for GSM Evolution
<b>ERDEF</b>	Enabler Requirement Definition
<b>ERELED</b>	Enabler Release Definition
<b>ETSI</b>	European Telecommunications Standards Institute
<b>e-UTRAN</b>	evolved Universal Terrestrial Radio Access Network
<b>GAN</b>	Generic Access Network
<b>GERAN</b>	GSM EDGE Radio Access Network
<b>GPRS</b>	General Packet Radio Service
<b>GPS</b>	Global Positioning System
<b>GSM</b>	Global System for Mobile communications

<b>HSPA</b>	High Speed Packet Access
<b>ISIM</b>	IP Multimedia Services Identity Module
<b>LTE</b>	Long Term Evolution
<b>MAC</b>	Media Access Control
<b>MMS</b>	Multimedia Messaging Service
<b>NAA</b>	Network Access Application
<b>NDIS</b>	Network Driver Interface Specification
<b>NMEA</b>	National Marine Electronics Association
<b>ODM</b>	Original Device Manufacturer
<b>OEM</b>	Original Equipment Manufacturer
<b>OMA</b>	Open Mobile Alliance
<b>OMNA</b>	Open Mobile Naming Authority
<b>OpenCMAPI</b>	Open Connection Manager (CM) Application Programming Interface (API)
<b>PAP</b>	Password Authentication Protocol
<b>PDN</b>	Public Data Network
<b>PIN</b>	Personal Identification Number
<b>PLMN</b>	Public Land Mobile Network
<b>PRL</b>	Preferred Roaming List
<b>PSK</b>	PreShared Key
<b>PUK</b>	Pin Unlocking Key
<b>QoS</b>	Quality of Service
<b>RAS</b>	Remote Access Service
<b>RAT</b>	Radio Access Technologies
<b>RFC</b>	Request For Comments
<b>RSSI</b>	Received Signal Strength Indicator
<b>R-UIM</b>	Removable User Identity Module
<b>SIM</b>	Subscriber Identity Module
<b>SMS</b>	Short Message Service
<b>SMS-C</b>	Short Message Service Center
<b>SSID</b>	Service Set Identifier
<b>UI</b>	User Interface
<b>UICC</b>	Universal Integrated Circuit card
<b>UIM</b>	User Identity Module
<b>UMA</b>	Unlicensed Mobile Access
<b>UMTS</b>	Universal Mobile Telecommunications System
<b>USIM</b>	Universal Subscriber Identity Module
<b>USSD</b>	Unstructured Supplementary Service Data
<b>UTRAN</b>	Universal Terrestrial Radio Access Network
<b>VPN</b>	Virtual Private Network
<b>WEP</b>	Wired Equivalent Privacy

<b>Wi-Fi</b>	Wireless Fidelity
<b>WiMAX</b>	Worldwide Interoperability for Microwave Access
<b>WISPr</b>	Wireless Internet Service Provider roaming
<b>WLAN</b>	Wireless Local Area Network
<b>WPA2</b>	Wi-Fi Protected Access Version 2
<b>WPS</b>	Wireless Protected Setup
<b>WWAN</b>	Wireless Wide Area Network
<b>SMS</b>	Short Message Service
<b>SMS-C</b>	Short Message Service Center
<b>SSID</b>	Service Set Identifier
<b>UI</b>	User Interface
<b>UICC</b>	Universal Integrated Circuit card
<b>UIM</b>	User Identity Module
<b>UMA</b>	Unlicensed Mobile Access
<b>UMTS</b>	Universal Mobile Telecommunications System
<b>USIM</b>	Universal Subscriber Identity Module
<b>USSD</b>	Unstructured Supplementary Service Data
<b>UTRAN</b>	Universal Terrestrial Radio Access Network
<b>VPN</b>	Virtual Private Network
<b>WEP</b>	Wired Equivalent Privacy
<b>Wi-Fi</b>	Wireless Fidelity
<b>WiMAX</b>	Worldwide Interoperability for Microwave Access



## 4. Release Version Overview

The focus of the OpenCMAPI enabler is the standardization of new functional APIs essential for applications to develop connection manager user interface and to extend applications and services with information related to the connection.

In order to allow for advanced service creation based on multiple services/enablers, interface functionalities for SMS, USSD as well as GPS are included.

The intention is to be supported by different types of devices such as Mobile Broadband devices, Wireless routers, M2M, Smartphones, Tablets, and Cloud Devices requiring access to mobile internet.

The OpenCMAPI functionalities are designed independently of a specific framework architecture or application domain.

This enabler will allow service providers to develop easily connection manager application and dedicated user interface to work across all their devices in their portfolio without additional effort to integrate or support a new device. Moreover, it will help to improve new types of applications relying almost solely on having a good always on connection such as virtual reality applications to be always informed about the status of the connection established or the ones available.

From device manufacturer point of view, OpenCMAPI will allow reducing effort and costs to be compliant with the requirements of different service providers and OEM/ODM (laptop manufacturers) and will provide immediate support of the services and user experience developed by these Service providers.

From the OEM/ODM such as laptop's manufacturers' point of view, OpenCMAPI will allow to develop connection managers applications that can easily interwork with any modems embedded and will decrease the complexity for customization and support for multiple Business models with service providers.

Furthermore, the OpenCMAPI will allow Corporate or Enterprise customers to develop their own connection managers, their own UI and services easily across numerous devices and without having to redevelop any time they have a new device to be supported.

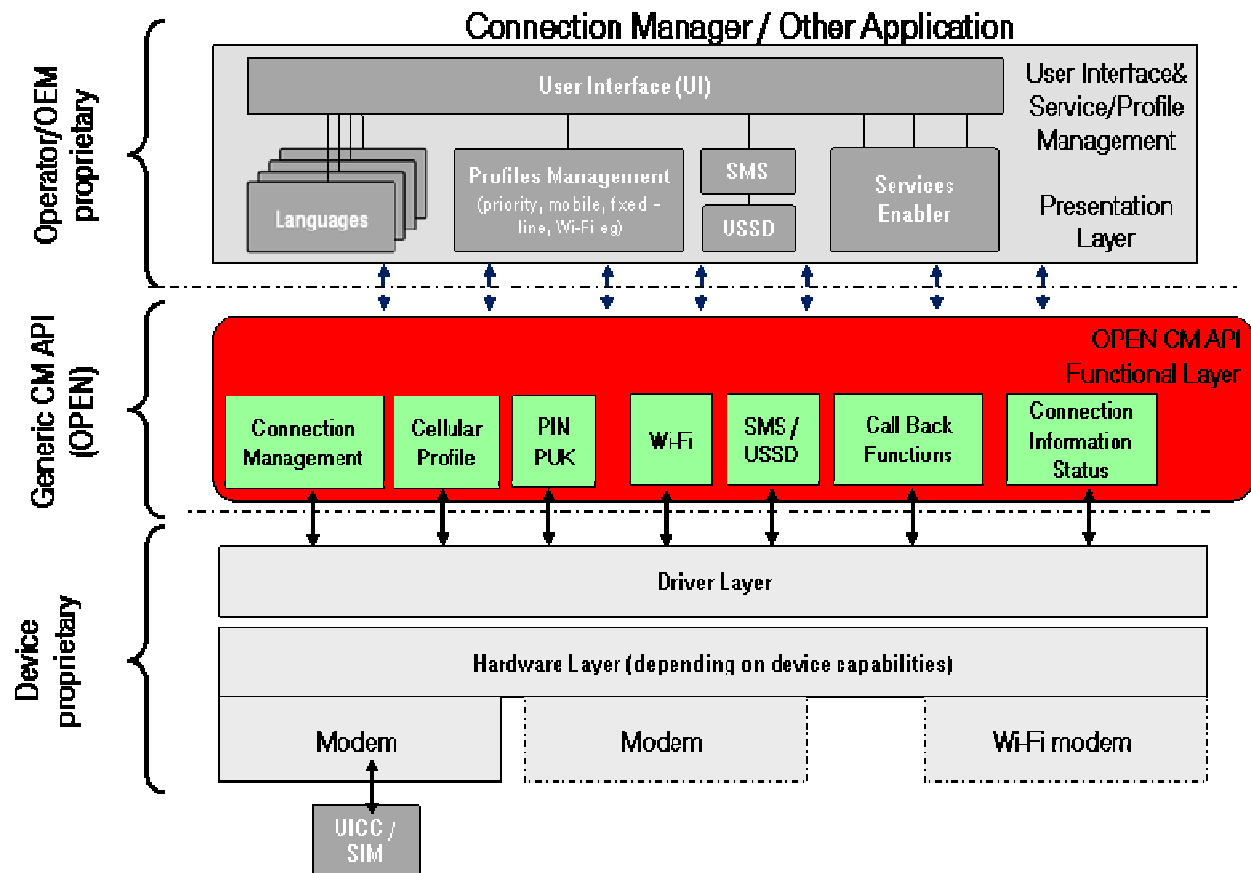


Figure 1: High Level Diagram for the OpenCMAPI Enabler

## 4.1 Version 1.0 Functionality

The API functionalities as proposed in the OpenCMAPI v1.0 aims at creating a new set of OMA service interfaces to enhance value of the connectivity and access to multiple networks by allowing the industry to easily develop services, differentiation and their own User experience on top of the connection management API.

The functionality of the OpenCMAPI v1.0 version includes the following:

- Network Types
- Cellular Network Management
- Device Service Handling
- PIN/PUK Management
- Connection Management:
- Wi-Fi handling & WLAN authentication
- CallBack
- Status information handling
- Statistics Management
- SMS service handling

- USSD service handling
- GPS service handling
- Power Management
- Tethering handling
- UICC interface
- PUSH Services

## **4.2 Version x.y Functionality**

### **4.2.1 Version x.y.z Functionality**

## 5. Document Listing for OpenCMAPI

This section is normative.

Doc Ref	Permanent Document Reference	Description
<b>Requirement Document</b>		
[OpenCMAPI_RD]	OMA-RD-OpenCMAPI-V1_0-20110712-C	Requirement Document for OpenCMAPI Enabler
<b>Architecture Document</b>		
<b>Technical Specifications</b>		
<b>Supporting Files</b>		

**Table 1: Listing of Documents in OpenCMAPI Enabler**

## 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 OpenCMAPI - Client Requirements

This section is normative.

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

**Table 2: ERDEF for OpenCMAPI Client-side Requirements**

## 9. ERDEF for OpenCMAPI - Server Requirements

This section is normative.

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

**Table 3: ERDEF for OpenCMAPI 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 1.0 History

Document Identifier	Date	Sections	Description
Draft Versions OMA-ERELED-OpenCMAPI-V1_0-20110428-D	28 Apr 2011	n/a	Initial baseline for RD review.
OMA-ERELED-OpenCMAPI-V1_0-20110630-D	30 Jun 2011	3, 4, 5	Update after completion of RD formal review at OMA Budapest meeting
Candidate Version: OMA-ERELED-OpenCMAPI-V1_0-20110712-C	12 Jul 2011	All	Status changed to Candidate by TP: OMA-TP-2011-0248- INP_OpenCMAPI_V1_0_RD_for_Candidate_Approval