



Converged IP Messaging Requirements

Candidate Version 1.0 – 06 Nov 2007

Open Mobile Alliance
OMA-RD-CPM-V1_0-20071106-C

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1. Scope

(Informative)

This document defines the requirements for the Converged IP Messaging (CPM) Enabler.

The aim of the CPM Enabler is to reuse existing and define new reusable building blocks to be able to create a variety of interpersonal, interactive, multimedia communication services that run on top of an IP network. It will be possible for third party Applications to use these capabilities, and these third party Applications also can interact with CPM Users as Participants. The CPM Enabler will provide the functionality to enable CPM based service users to communicate seamlessly with the users of Non-CPM Communication Services such as SMS and MMS.

The CPM Enabler aims to provide the functionality for:

- a consistent user experience across many service domains for all IP networks (mobile, home, Internet worlds) by addressing the service constraints in a bearer-agnostic manner
- interoperability between different service providers, including roaming conditions
- supporting the creation and exchange of charging information
- allowing users to be unaware of the underlying technology used for communication

The CPM Enabler is targeted to build upon the user experiences provided by the following services:

- text and/or multimedia messaging enabled services: e.g. SMS, IMPS, SIMPLE IM, Email, MMS
- voice-enabled services: e.g. PoC, VoIP
- video-enabled service: e.g. Video telephony, webcam, Video streaming

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)

2.2 Informative References

- [OMADICT] "Dictionary for OMA Specifications", Version 2.6, Open Mobile Alliance™, OMA-ORG-Dictionary-V2_6, [URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [OMA Presence] "Presence SIMPLE", Version 1.0, Open Mobile Alliance™, OMA-ERELE-Presence_SIMPLE-V1_0, [URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [OMA XDM] "XML Document Management", Version 1.0, Open Mobile Alliance™, OMA-ERELE-XDM-V1_0, [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.

3.2 Definitions

1-1 CPM Conversation	A CPM Conversation where one Participant communicates with another Participant.
1-N CPM Conversation	A CPM Conversation with many Participants and in which all Participants communicate with one another.
Authorized Principal	See [OMADICT].
Charging Correlation	See [OMADICT].
Charging Event	See [OMADICT].
Communication Capabilities	Set of communication means (e.g. text, video...) available to the CPM User.
Content Screening	The act of blocking, allowing or amending content.
Converged Address Book	A set of entries called "contacts" commonly available to any registered device. Each contact entry consists of a set of static and/or dynamic information (e.g. name, address, Presence Subscription information, display name). Entries in the database support various addresses from different addressing schemes.
CPM Ad-hoc Group	A set of CPM Addresses that is temporarily set up (e.g. at communication initiation).
CPM Address	An identifier for a unique Principal that allows participation in CPM Conversations.
CPM Conversation	The exchange of CPM Messages and/or CPM Sessions, associated with each other due to common characteristics, between two or more Participants (e.g. CPM Users or Applications).
CPM Group	A CPM Pre-defined Group or a CPM Ad-hoc Group.
CPM Group Membership Rules	A set of policies and attributes for controlling the CPM Group Session participation, which defines the allowed actions of Participants during the CPM Group Session.
CPM Group Session	A CPM Session established for a CPM Group.
CPM Message	Information that is sent to one or more recipients. A CPM Message can contain several discrete Media (e.g. text, images, audio-clips, video-clips).
CPM Pre-defined Group	A container for a predefined set (possibly empty) of Principals, group information (e.g. subject), and CPM Group Membership Rules. A CPM Pre-defined Group is a Principal identified via a single persistent CPM Address.
CPM Session	A real-time interaction between two or more Participants during which a combination of CPM Messages and/or continuous Media may be exchanged.
CPM Session History	Stored representation of the content exchanged during a CPM Session.
CPM Session Invitation	A request sent by a Principal (the inviter) to one or more other Principals (the invitee(s)). This request can be sent either to establish a CPM Session between the inviter and the invitee(s) or to solicit the invitee(s) to join an existing CPM Session.
CPM System	An implementation of the CPM Enabler, together with other individual system elements (e.g. other Enablers, interworking functions and interfaces).
CPM Thread	Stored representation of a CPM Conversation.
Deferred Message	A CPM Message that is temporarily stored in the network when the recipient is not available or not willing to receive it.
Immediate Messaging	See [OMADICT].

Malware	Malicious software or message(s) conceived to infiltrate, disrupt, consume resources or damage a computerized system and/or network. A Malware can take on a variety of forms and includes but is not limited to computer viruses, worms, Trojan horses, spyware, adware, and other forms of malicious software or data.
Media	Digital means by which information is packaged. Media may come in different forms, which are referred to as Media Types.
Media Type	See [OMADICT].
Non-CPM Communication Service	A communication service with which the CPM Enabler interworks (e.g. SMS, MMS, Instant Messaging, Push To Talk, email, VoIP, Video-over-IP).
Offline Charging	See [OMADICT].
Online Charging	See [OMADICT].
Participant	See [OMADICT].
Presence Information	See [OMA Presence].
Presence Subscription	See Subscription definition in [OMA Presence].
Principal	See [OMADICT].
Pseudonym	An identifier in a human readable form, associated with a CPM Address, that a user can negotiate for himself. For example, the Pseudonym can be used to participate in CPM Group Sessions anonymously.
Public Chat Room	A CPM Group Session established for a CPM Pre-defined Group that has no fixed list of members.
Unwanted Messaging (spam)	Abuse of electronic messaging services to send (usually in bulk) messages unwanted by the recipient(s), e.g. an e-mail server can be used to propagate unwanted or unrequested messages to any number of end-users (recipients). Unwanted messages are not limited to e-mail and include all forms of messages. In many cases, the originator of the messages attempts to conceal or mislead the recipients as to the origin of the message(s) though it is not always the case.
User Communication Preferences	The preferences that the CPM User sets regarding the way he prefers to communicate.
User Preferences Profile	A set of user settings which controls aspects of how a user perceives and receives services; a user may have several such profiles.
Value Added Service	See [OMADICT].
Value Added Service Provider	See [OMADICT].

3.3 Abbreviations

3GPP	3rd Generation Partnership Project
3GPP2	3rd Generation Partnership Project 2
CAB	Converged Address Book
CPM	Converged IP Messaging
DRM	Digital Rights Management
IETF	Internet Engineering Task Force
IM	Instant Messaging or Instant Message
IMPS	Instant Message and Presence Service
IMS	IP Multimedia Subsystem
IP	Internet Protocol
MMS	Multimedia Messaging Service
OMA	Open Mobile Alliance
PC	Personal Computer

PDA	Personal Digital Assistant
PLMN	Public Land Mobile Network
PoC	Push-to-talk over Cellular
PSTN	Public Switched Telephone Network
SIMPLE	SIP for Instant Messaging and Presence Leverage Extensions
SIP	Session Initiation Protocol
SMS	Short Message Service
TISPAN	Telecommunications and Internet converged Services and Protocols for Advanced Networking
URI	Uniform Resource Identifier
VAS	Value Added Service
VASP	Value Added Service Provider
VoIP	Voice over IP
XDM	XML Document Management
XML	eXtensible Markup Language

4. Introduction (Informative)

The CPM Enabler provides common building blocks, by reuse of existing blocks and by defining new ones, to allow for both the consolidation of present and the creation of future interpersonal interactive multimedia communication services which accommodate different user experiences such as deferred and Immediate Messaging, session-based messaging, and half duplex/full duplex conferencing.

CPM supports one-to-one, one-to-many personal communications, and also communication with Applications.

CPM enables the creation of services that allow users to:

- communicate without knowing what network access technology is being used,
- have parallel conversations, each with different Media Types,
- concurrently associate several devices with themselves,
- personalise their services by setting preferences to indicate, for example, which device(s) messages should be sent to,
- store any type of message and Media in the network, and
- seamlessly make the transition from legacy voice, video and messaging services such as MMS and SMS to CPM based services.

The efficient use of resources (e.g. radio bandwidth) by all of CPM's features will be taken into consideration in the design of the CPM Enabler.

The CPM Enabler will provide the following functions:

- 1) **User Addressing and Multi-device environment (N:M scenario):** Aiming for best user experience in today's heterogeneous world for services, networks and devices, the CPM Enabler supports a multi-addresses and multi-devices environment. Therefore the CPM Enabler supports the following addressing scenarios:
 - Handling of single or multiple addresses on a single device.
 - Handling of single or multiple addresses on multiple devices.
 - Support for receiving different Media Types over different devices on a per user basis.

The above scenarios can be realized with a single or multiple access points. User preferences are a way to provide for address/device/access point selection. The user's capability for device selection in conversation can be controlled via user preferences.

- 2) **Conversation Handling:** The CPM Enabler supports the following conversation requirements:
 - Immediate and Deferred Messaging (with temporary server storage of CPM Conversation and subsequent delivery; with mailbox storage, notification, and subsequent retrieval).
 - 1-1, 1-N, and 1-Application CPM Conversation with the selection of any kind of Media (single or multiple).
 - Add or remove Media at the invocation and any time during a CPM Conversation.
 - Add or remove users at the invocation and any time during a CPM Conversation.
 - Start a CPM Conversation by sending a CPM Message or establishing a CPM Session.
 - Change of user's device during a CPM Conversation without disrupting the conversation.
- 3) **Presence Support:** The CPM Enabler provides a flexible interaction with the Presence Enabler. While CPM has to provide the needed support for presence, the invocation of the service itself does not require the presence service, and does not mandate an always-on condition for the CPM Users.

- 4) **Media Support:** CPM supports discrete (text, images, video clip, audio clip, voice clip, binary files) and continuous (e.g. bidirectional voice, streaming video) Media.
- 5) **Group Communication and Management:** The CPM Enabler supports the invocation of CPM Group Conversation for CPM Pre-defined and Ad-hoc Groups, which can be modified during CPM Conversations.
- 6) **Interworking with Non-CPM Communication Services:** The CPM Enabler defines interworking with Non-CPM Communication Services.
- 7) **Network-based Storage:** CPM aims to provide a consistent user experience and it therefore includes a network-based storage for:
 - o The user's address books which are independent of user's services.
 - o The Media.
 - o The CPM Messages and CPM Session Histories (e.g. stored with contact, time, messages, shared Media to allow filtering of histories to user's views).

All these data can be synchronized to all the devices of the CPM User. The storage capabilities are subject to user preferences and service provider policies.

- 8) **Application Support:** The CPM Enabler supports a generalized interface for VAS to communicate with.

A device may only be able to support a subset of CPM functionalities depending on the device capabilities.

The CPM Enabler will ensure that the user's privacy is protected, by providing a privacy protection level that is at least equivalent to that provided by similar Enablers. The reuse of existing mechanisms will be considered.

The CPM Enabler must be carefully designed to ensure mechanisms efficiently manage push/pull requests while optimizing message throughput with minimal delay for all data exchanges. Similar existing Enablers have been developed with the same constraints (e.g., PoC, SIMPLE IM, Presence and Mobile Email) and thus the same mechanisms will be reused as required.

This document first captures the use cases covered by the CPM Enabler, and then enumerates specific high level technical requirements which derive from these use cases.

This document also defines some new concepts used to describe the use cases enabled by the CPM Enabler and the requirements that the CPM Enabler will satisfy: these concepts are CPM Conversation, CPM Message, CPM Session, CPM Session History, CPM Thread (see also 3.2 Definitions).

The CPM Conversation represents the “live” information exchange that Principals can have exploiting the CPM Enabler functionalities, where this information can be associated together by common characteristics. As represented in the Communication Representation portion of Figure 1, a CPM Conversation is constituted by any number of CPM Messages and CPM Sessions. A CPM Message is information of a discrete nature that can contain several discrete Media (e.g. text, images, audio-clips, video-clips). A CPM Message can be sent within or outside a CPM Session, where a CPM Session represents a logical connection between two or more Principals established for a finite duration. In a CPM Session, Principals can also exchange continuous Media, that due to the continuous nature of this type of information, need a logical connection (i.e. with a beginning and an end) to be set up and maintained between CPM Principals. An underlying assumption is that a CPM Conversation should only be composed of one CPM Session at a given time. A user could however participate in several CPM Conversations in parallel (each of them containing one CPM Session) but this is not the intent of this diagram to show that functionality.

The Storage Representation portion of Figure 1 pictures a CPM Thread. Authorized Principals can capture and store the information that they have been exchanging during a CPM Conversation as a CPM Thread in network-based storage provided by a CPM service provider. As such, a CPM Message may become a stored CPM Message and continuous Media may become stored Media (e.g. voice-clip, video-clip). When stored CPM Messages and stored Media are part of the same CPM Session, they are associated together in network based storage as a CPM Session History. Stated in another manner, a CPM Thread can be described as CPM Session Histories and stored CPM Messages, derived respectively from the CPM Sessions and any CPM Messages exchanged outside a CPM Session during a CPM Conversation.

Together, the Communication Representation and the Storage Representation portions of Figure 1 capture the concepts of a CPM Conversation and a CPM Thread respectively, and the relationship between them.

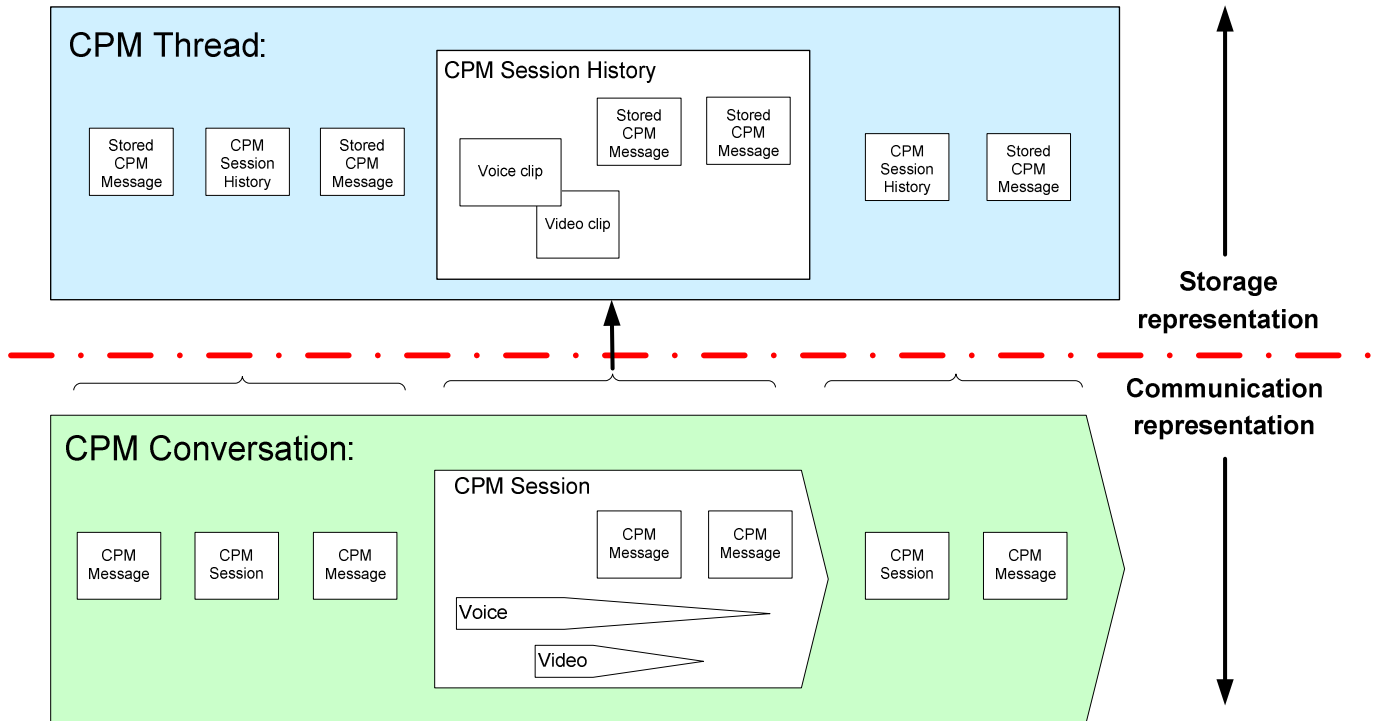
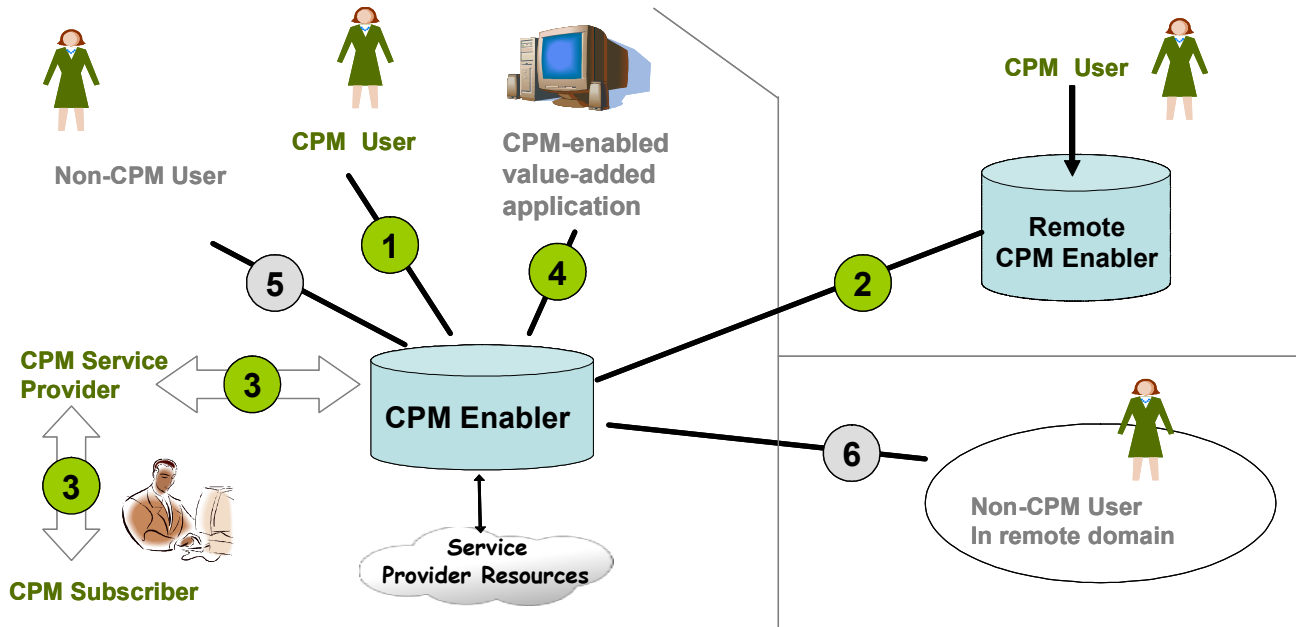


Figure 1: Illustration of the relationship between a CPM Conversation and a CPM Thread and depiction of the items they contain

4.1 Actors and their Roles for the CPM Enabler

The following figure shows the actors and their roles for the CPM Enabler.



- 1** CPM User - using CPM enabled communication services in his home domain
- 2** Remote CPM User - using CPM-enabled communication services between different CPM-enabled domains
- 3** Service provider offering CPM-enabled services to its subscribers

- 4** Value-added application - using CPM enabled communication services over open interface
- 5** Non-CPM User - using communication services with CPM Users utilizing CPM Enabler's interworking functions
- 6** Remote Non-CPM User - using communication services with CPM Users utilizing CPM Enabler's interworking functions between domains

Figure 2: The CPM Enabler – Actors and Roles

5. Use Cases (Informative)

5.1 Multiple Service Converged IP Messaging

5.1.1 Short Description

Joe and Sally are two friends who are able to communicate using Converged IP Messaging in a seamless way. The use case shows presence, text, video, picture and voice communications being used together to give Joe and Sally a good communications experience while they are remote from each other.

5.1.2 Actors

Joe is a CPM User based in England.

Sally is a CPM User based in Japan.

5.1.2.1 Actor Specific Issues

Joe wants to be able to communicate with Sally using any CPM facility to give the richest communications experience possible.

5.1.2.2 Actor Specific Benefits

Joe and Sally can both take advantage of sophisticated CPM facilities.

5.1.3 Pre-conditions

Joe and Sally have subscribed to each other's Presence Information.

Joe and Sally have both subscribed to the CPM Service on their respective networks.

CPM interconnection is provided between the network used by Joe and that used by Sally.

5.1.4 Post-conditions

Joe and Sally can exchange messages, pictures and voice clips with each other.

Joe and Sally can talk to each other or be on a video call.

5.1.5 Normal Flow

- 1) Joe is travelling on a train in England and opens his mobile device.
- 2) He looks at his address book and notices that Sally is online and available. He hasn't communicated with Sally in a while and sends a message to ask if she is busy.
- 3) Sally replies that it is great to hear from Joe, that she is in Japan, and asks what he is up to these days.
- 4) Joe sends a picture of his latest project, a barn conversion.
- 5) Sally then asks if Joe can talk now.
- 6) Joe says yes, so Sally invites Joe to a voice call.
- 7) They chat for a while but then the train goes into a tunnel and the signal is lost.
- 8) Sally sends a message to Joe to tell him to let her know when he is out of the tunnel. She will be busy doing something away from her phone but nearby, so she asks him to send a message containing a voice clip to update her.
- 9) When Joe's train exits the tunnel he receives Sally's message and then records a voice clip and sends it to Sally.

- 10) Sally has set her phone to immediately play received voice clips, so the voice clip is immediately played over Sally's device; she returns to her phone and invites Joe to a video call to show him the night lights in Japan.
- 11) Joe accepts the invitation and is able to see Tokyo at night. Sally is able to see the green fields going past Joe.

5.1.6 Alternative Flow

None.

5.1.7 Operational and Quality of Experience Requirements

Joe and Sally both experience the communications in real time. There are no significant delays to any part of the service.

5.2 Multi-devices and Dynamic Session Modification

5.2.1 Short Description

A CPM User can have multiple devices in his/her environment and each device has its own capabilities. This use case describes how a Service based on the Converged IP Messaging Enabler can be offered when the CPM User has several devices to ensure a consistent and seamless user experience across them.

5.2.2 Actors

Alice is a CPM User that uses the Converged IP Messaging service on several devices.

Bob is a CPM User that uses the Converged IP Messaging service on several devices.

5.2.2.1 Actor Specific Issues

Alice is at home and has three CPM devices, all of them are registered to the CPM Service: a mobile phone, a fixed phone and a laptop. Alice's preferences state that she wants to be notified of new CPM Messages and CPM Session Invitations on the devices on which she is registered, in this use case on all her three devices. Alice wants to switch her CPM Session from one CPM device to another.

Bob is on holidays and also has three devices all of them registered with the CPM System: a mobile phone, a PDA and a laptop. Bob wants to share with Alice some photos of his holidays and sends her a CPM Message with these pictures. Bob wants to modify his on-going CPM Sessions by adding new Media.

The CPM System notifies Alice of new CPM Messages on all devices. The CPM Message is displayed on the device chosen by Alice. The CPM System notifies Alice of new CPM Session Invitations on all devices and then the CPM Session starts on the device(s) chosen by Alice.

5.2.2.2 Actor Specific Benefits

Alice can be notified of new CPM Messages on all the devices on which she is registered so she will not miss Bob's CPM Message.

Alice can be notified of new CPM Session Invitations on all the devices on which she is registered so she will not miss Bob's invitation.

Alice can switch from one device to another during the CPM Session with Bob to finish her discussion while leaving home.

Bob can modify the on-going CPM Session by adding a new continuous Media and choosing a target device.

5.2.3 Pre-conditions

Alice and Bob are both provisioned to use the CPM Service.

Alice and Bob's devices are provisioned on the CPM System and are all registered with the CPM System.

5.2.4 Post-conditions

Alice is able to see Bob's CPM Messages on the device she chooses to.

She is able to continue the CPM Session with Bob while switching from a device to another.

Bob is able to modify the ongoing CPM Session, add a new continuous Media and manage the different Media on multiple devices.

5.2.5 Normal Flow

- 1) Bob just came back from holidays and wants to share some pictures with Alice. To do this, he decides to use his CPM Service.
- 2) Bob accesses the CPM Service using his laptop, composes his CPM Message adding some text (e.g. a short subject and some body text) and attaching the most beautiful pictures he took, selects Alice from his address book and then sends the CPM Message.
- 3) Bob's CPM System then verifies that Bob has the rights (e.g. if he has enough credit on his account) to submit this CPM Message.
- 4) Bob's CPM System forwards the CPM Message to Alice's CPM System.
- 5) Bob's CPM System stores the CPM Message in Bob's network-based storage in the CPM service provider domain. Depending on the CPM Message characteristics, the user's preferences and/or the service provider's policy, Bob's CPM System may synchronise all Bob's device sentboxes so that the sent CPM Message appears on all Bob's registered devices.
- 6) Alice's CPM System checks Alice's profile for availability and user's preferences and for the device(s) that should receive the CPM Message.
- 7) Alice's CPM System determines that Alice is available and her three devices are registered with the CPM System.
- 8) Alice's CPM System sends Bob's CPM Message to Alice on the three devices and stores it in Alice's network-based storage in the CPM service provider domain. Depending on the CPM Message characteristics, the user's preferences and/or the service provider's policy, for each registered device:
 - The entire CPM Message could be sent.
 - Only a notification (with Bob's CPM Address and the subject) could be sent.
 - Nothing is sent.
- 9) Each of Alice's devices notifies Alice that she has got a new CPM Message from Bob.
- 10) Alice is working on her computer. She opens the CPM Message on the computer. As a result, the CPM System synchronizes with Alice's other CPM devices to update the CPM Message to show that it was "read". Alice could decide one of the following management options for the CPM Message:
 - She could store the CPM Message locally on her computer.
 - She could store the CPM Message into her network based personal storage.
 - She could delete the CPM Message locally (e.g. to preserve limited storage capacity) while retaining the notification and the storage on other devices or in the network.
 - She could delete the CPM Message globally from all CPM storage on all devices. The CPM System would then synchronize this deletion with all of her devices.

- 11) Alice is amazed by Bob's pictures and wants to discuss with him about his holidays. She requests to initiate a CPM Session to have a discussion with him by interacting with the CPM System from her computer.
- 12) Alice's CPM System then verifies that Alice has the rights (e.g. if she has enough credit on her account) to submit this request.
- 13) Alice's CPM System forwards the CPM Session Invitation to Bob's CPM System.
- 14) Bob's CPM System checks Bob's profile for availability and Bob's user preferences and for the CPM device(s) that should receive the request.
- 15) Bob's CPM System determines that Bob is available and his three devices are registered with the CPM System.
- 16) Bob's CPM System sends Alice's CPM Session Invitation to Bob on his three devices, depending on the request characteristics, Bob's user preferences and/or the service provider's policy, for each registered CPM device, and whether they could be or could not be notified of the incoming CPM Session Invitation. In this case, Bob is notified on all his devices that Alice sent a CPM Session Invitation.
- 17) Each of Bob's devices notifies Bob that he has got a CPM Session Invitation from Alice.
- 18) Bob accepts the CPM Session Invitation on his PDA.
- 19) Bob is no longer notified on his two devices (the mobile phone and the laptop) regarding the CPM Session Invitation from Alice.
- 20) Bob and Alice continue their discussion.
- 21) After a while, Alice has to leave for an appointment but still wants to continue the discussion with Bob.
- 22) She requests the CPM System to switch the CPM Session from the laptop to another device. She selects the mobile phone from the list of registered devices.
- 23) She indicates that she would like to have the discussion (i.e. the messages up until Step 10) displayed to her mobile so that she can remember the context of the discussion.
- 24) Alice's CPM System manages the switching of the CPM Session to the new device and sends the CPM Session History to the mobile.
- 25) Alice continues the discussion on her mobile phone, and the discussion is displayed on the mobile phone.

5.2.6 Alternative Flow – Dynamic CPM Session Modification (Different Device Order)

- 21) After a while, Alice has to leave for an appointment but still wants to continue the discussion with Bob.
- 22) She requests the CPM System to list, on her mobile phone, the on-going CPM Session(s) from her other devices.
- 23) Alice selects the CPM Session she started with Bob on her computer.
- 24) She indicates that she would like to have the CPM Session History displayed to her mobile so that she can remember the context of the discussion.
- 25) Alice's CPM System sends the CPM Session History to Alice's mobile.
- 26) Alice selects the target CPM Session, the CPM System manages the switching of the existing CPM Session from the laptop to her mobile phone, and Alice continues the discussion on her mobile phone.

5.2.7 Alternative Flow – Dynamic CPM Session Modification (New Media)

- 21) After a while, Bob would like to talk to Alice directly.

- 22) Bob is able to display on his PDA information about his ongoing CPM Sessions as well as the Media and devices associated to those CPM Sessions.
- 23) Bob selects the CPM Session he started with Alice, and requests to add a voice stream to the CPM Session.
- 24) Bob's PDA sends a request for dynamic session modification to Bob's CPM System.
- 25) Both (Alice's and Bob's) CPM Systems arrange the addition of a voice stream to the CPM Session, and a request for this additional voice stream is sent to Alice's devices.
- 26) Alice accepts the incoming voice stream on her laptop.
- 27) Alice and Bob start to talk to each other and in the meantime they can continue to send each other CPM Messages.
- 28) After a while, Bob would like to share some videos of his holidays with Alice.
- 29) From his PDA, Bob selects the CPM Session he started with Alice, requests to add a streamed video (he has on his personal area in the CPM service provider domain) to the CPM Session and to display it on his laptop.
- 30) Bob's PDA sends a request for dynamic session modification to Bob's CPM System.
- 31) Bob's CPM System forwards the request to Alice's CPM System.
- 32) Alice's CPM System notifies Alice's laptop of Bob's request to add streamed video to the CPM Session.
- 33) Alice accepts the request and chooses her laptop as a target for the streamed video that Bob wants to share with her.
- 34) The Alice's CPM System receives the reply from Alice's laptop and forwards it to Bob's CPM System.
- 35) Alice and Bob start to share the streamed video that Bob took in Sydney on their laptops while continuing their discussion on respectively her laptop and his PDA.

5.2.8 Alternative Flow – Dynamic CPM Session Modification (Forward to Laptop)

Alice has only one device (her mobile handset) enabled for CPM and she receives a CPM Message from Bob with a large jpeg image which is displayed on the device as a thumbnail. Instead of viewing the entire CPM Message, Alice forwards the CPM Message and attachment to her email account and downloads the entire image and contents as an email from her laptop.

5.2.9 Operational and Quality of Experience Requirements

A user shall be able to receive new CPM Messages and new CPM Sessions Invitations on all the devices he/she has registered with the CPM System dependent upon his/her preferences, his/her device(s) capabilities and/or service provider's policy.

A CPM User shall be able to switch from one CPM device to another during a CPM Session.

A CPM User shall be able to modify an ongoing CPM Session by adding new Media.

A CPM User may define his CPM preferences like: receive the notifications only on his mobile phone, receive notifications for CPM Messages sent to his business address and only on her computer. He is able to define rules based on his addresses, device(s), CPM Messages and Media Types, etc.

5.3 VAS Application Messaging

5.3.1 Short Description

This use case describes a scenario where a VASP exchanges messages with an end user making use of the Converged IP Messaging capabilities.

5.3.2 Actors

Mary

Peter

John

VASP

Converged IP Messaging system

Other non-CPM messaging servers

5.3.2.1 Actor Specific Issues

VASP:

- wants to send a message to one or several end users without the need to know whether the recipient end users have or not a Converged IP Messaging client.
- wants to be able to receive messages from end users using a single protocol independently of the nature of the message and the messaging technology used by the user.
- wants to have at least the same functionality as it had when sending messages to Non-CPM messaging servers.

Mary and Peter want to be able to exchange messages with VASPs after changing their device to a new one with Converged IP Messaging capabilities.

5.3.2.2 Actor Specific Benefits

The VASP is relieved of the burden of managing connections to several messaging servers. Now the VASP may have a single interface with the messaging infrastructure and use a single protocol for message exchange.

5.3.3 Pre-conditions

The VASP is connected to a Converged IP Messaging system.

Mary has a Converged IP Messaging enabled client.

Peter has a Converged IP Messaging enabled client.

John has a client for a Non-CPM Communication Service.

5.3.4 Post-conditions

The messages exchanged by the VASP and the users are correctly received by the intended recipients.

5.3.5 Normal Flow

- 1) Mary sends a message to a specific VASP making use of the Converged IP Messaging system because she wants to subscribe to a news service.
- 2) The Converged IP Messaging system receives the message and forwards it to the recipient VASP.

- 3) The VASP receives the message from the Converged IP Messaging system.
- 4) The VASP decides then to send a message with the latest news to Mary. Independently of the content of the message (text, multimedia, etc), the VASP submits the message to the Converged IP Messaging system.
- 5) The Converged IP Messaging system knows that Mary is registered from a Converged IP Messaging client and sends the message to Mary.
- 6) Mary receives the message at her Converged IP Messaging client.

5.3.6 Alternative Flow (non-CPM Services)

- 1) John sends a message to a specific VASP making use of one of the non-CPM messaging technologies supported by his mobile device because he wants to subscribe to a news service.
- 2) The corresponding non-CPM messaging server forwards the message to the Converged IP Messaging system.
- 3) The Converged IP Messaging system forwards the message to the recipient VASP.
- 4) The VASP receives the message from the Converged IP Messaging system.
- 5) The VASP decides then to send a message with the latest news to John. Independently of the content of the message (text, multimedia, etc), the VASP submits the message to the Converged IP Messaging system.
- 6) The Converged IP Messaging system knows that John is not registered with the CPM System and therefore forwards the message to the appropriate non-CPM messaging server.
- 7) The non-CPM messaging server forwards the message to John.
- 8) John receives the message at his non-CPM messaging client.

5.3.7 Alternative Flow (Multiple Recipients)

- 1) The VASP decides to send a message with the latest news to Mary, Peter and John (e.g. because they have subscribed to that specific service). Independently of the content of the message (text, multimedia, etc), the VASP submits the message to the Converged IP Messaging system.
- 2) The Converged IP Messaging system knows that Mary and Peter are registered from a Converged IP Messaging client whereas John is not registered with the CPM System. Then, the Converged IP Messaging system sends the message to Mary and Peter and forwards it to the appropriate non-CPM messaging server for the delivery to John.
- 3) Mary and Peter receive the message at their Converged IP Messaging client.
- 4) The non-CPM messaging server forwards the message to John.
- 5) John receives the message at his non-CPM messaging client.

5.3.8 Alternative Flow (Multimedia Conference Application)

- 1) Mary is accessing a VASP-based Multimedia Conference Application and is setting up a conference to start at 5pm and which shall include both Peter & John.
- 2) The Multimedia Conference Application is using the CPM Enabler Application interface to provision an invitation message to the conference to be sent to Mary, Peter & John at 5pm.
- 3) From the Multimedia Conference Application, Mary can see that both Peter & John have joined the conference.
- 4) After the five minutes allocated for the roll call and the introduction of the Participants, the Multimedia Conference Application takes over, mutes the line and plays the introduction video.

- 5) As soon as the video is over, the Multimedia Conference Application hands over the control of the conference to Mary, who allows, from the Multimedia Conference Application, only text messages incoming from the Participants but herself. The CPM Enabler enforces this moderation of Media.
- 6) Mary is activating her web-cam from the Multimedia Conference Application; the CPM Enabler adds her video stream to the conference.
- 7) Peter is losing coverage (due to a tunnel) and drops from the conference. Peter indicated this might happen and would like to be reconnected as soon as he gets coverage. The CPM Enabler notifies the Multimedia Conference Application that Peter is no longer in the conversation. The Multimedia Conference Application requests from the CPM Enabler to be notified as soon as Peter is available.
- 8) Peter comes back in coverage and registers again on the CPM Server. The CPM Enabler notifies the Multimedia Conference Application that Peter is available. The Multimedia Conference Application invites Peter to join back into the conference.
- 9) Once her presentation is finished, Mary, from the Multimedia Conference Application, opens the floor for the Q&A session.
- 10) During the lifetime of the conference, the Multimedia Conference Application generates a transcript of the conference by tracking questions from the floor and generating an automatic registry of attendance.

5.3.9 Alternative Flow (Application on the User's Device)

- 1) Mary activates the "Restaurant Finder" VAS Application on her terminal and finds the listing of a restaurant that sounds good.
- 2) Mary invokes the "Dinner Proposal" option from the "Restaurant Finder" Application menu and composes a dinner proposal to Peter including the restaurant info from the "Restaurant Finder" Application listing.
- 3) Peter receives the message in his messaging client.
- 4) Peter replies to Mary that he knows this restaurant, but does not recommend it.
- 5) Mary receives the reply from Peter while still in the "Restaurant Finder" Application, and continues to search for another eatery. Finding another spot, she sends a new dinner proposal to Peter.
- 6) Peter receives the new dinner proposal, examines the restaurant info and agrees to meet. He replies to Mary with a message setting a time.
- 7) Mary happily receives the message and exits the "Restaurant Finder" Application (after saving the map to the restaurant).

5.3.10 Operational and Quality of Experience Requirements

The functionalities of the different existing protocols for message exchanges between VASPs and current messaging platforms (e.g. MM7) should be preserved.

5.4 Multimedia Group Communication

5.4.1 Short Description

This use case describes a scenario where Alice, Bob, David and Carol start planning evening activities over a CPM Group Session, but soon they want to use also other Media for communication. They end up keeping the CPM Group Session open the whole day and sending some funny/entertaining Media to others every now and then. They also invite a new Participant, Ted, to the CPM Group Session.

5.4.2 Actors

The involved actors are:

- Users (or Participants): Alice, Bob, David, Carol and Ted.
- Service provider.

5.4.2.1 Actor Specific Issues

None identified.

5.4.2.2 Actor Specific Benefits

The benefits for the users are:

- Users can flexibly change the Media on an as needed basis during the CPM Group Session.
- Participants of the CPM Group Session can dynamically change.

The benefits for the service provider are:

- Service provider can offer less-limited communication infrastructure to users.
- Service provider is able to provide various kinds of new Applications/services.
- Service provider is able to offer full-duplex Media using infrastructure build on-top of OMA architecture.

5.4.3 Pre-conditions

The required pre-conditions are:

- The users have a subscription from the service provider to allow participation in multimedia CPM Group Session.
- A user is authorised to either initiate a CPM Group Session on ad-hoc basis or create a CPM Pre-defined Group on a server depending on the service provider's offering and device capabilities.
- The users have a terminal capable of negotiating and handling different real-time and non-real-time Media in a CPM Session.
- The users have been given permission (according to access policies) to do the actions required in the use case.

5.4.4 Post-conditions

The required post-conditions are:

- Users can continue the communication until the CPM Group Session ending criteria is met. The CPM Group Session may end e.g. when the initiating user leaves, or at a pre-defined ending time, or when there are less than a pre-defined number of users in the CPM Group Session.
- A CPM Session History is available to users who require it in their network-based storage.

5.4.5 Normal Flow

The normal flow for this use case is:

- 1) Alice wants to start to plan the evening with her friends Bob, David and Carol.
- 2) Alice sees from the presence enabled address book that Bob, David and Carol are all available, but David is busy in the meeting. She decides to start a CPM Group Session based only on messages instead of a voice call since David is likely not able to talk.

- 3) Alice establishes the CPM Group Session with her friends and sends the first message containing text and funny image she selected from the terminal menu.
- 4) After chatting a while, Bob remembers a nice restaurant and wants to send an image of the restaurant he took last time. He writes a short description about the restaurant and attaches the image to the message.
- 5) David's meeting ends and he wants to continue the discussion over the voice. He sends a request to add full-duplex voice to the CPM Group Session.
- 6) Alice, Bob and Carol accept the request to add voice to the CPM Group Session.
- 7) Carol remembers that Ted should be free in the evening and she sends an invitation to Ted to join the CPM Group Session.
- 8) Ted accepts the invitation sent by Carol. Ted sees that Bob, David and Alice are also participating in the CPM Group Session.
- 9) After getting plans for the evening ready, they remove voice from the CPM Group Session, but still keep the CPM Group Session to be able to send messages to each other during the rest of day. Now, the CPM Group Session has five Participants: Alice, Bob, David, Carol and Ted.
- 10) Alice wants to send others a message with funny video clip she received in the email. Alice has options to send the video as a file or as a video stream. She decides to send the video as a file.
- 11) The other CPM Group Session Participants receive the file.
- 12) Later during the day, Carol is walking in the downtown and sees very interesting street performance show. She knows that her friends are interested in seeing it as well. She starts streaming the live video to the Participants of the CPM Group Session. Alice, Bob, David and Ted receive the invitation for to add video to the CPM Group Session from Carol and they accept it.
- 13) After Carol stops streaming video, the CPM Group Session is kept alive and they continue exchanging messages every now and then.
- 14) In the evening, Ted wants to get some further instructions about how to find the right restaurants, ask about the weather etc. He decides to add half duplex voice to the ongoing CPM Group Session, since he knows that others might be too busy to respond text messages or to have full-duplex voice call while they are preparing for the evening.
- 15) Alice, Bob, David and Carol receive an invitation to add half duplex voice to the ongoing CPM Group Session. They all accept the invitation. While preparing for the evening and travelling to the restaurant, they can speak to each others over half duplex voice or send messages.

5.4.6 Alternative Flow

Alternatively, Alice may use a CPM Pre-defined Group for starting to communicate with her friends.

- 1) Alice selects group "Team X" from the address book and she requests to start a CPM Group Session with the group members of "Team X".
- 2) Bob, David and Carol receive an invitation from Alice, but they also see that the invitation is coming from the group "Team X".
- 3) All communication methods as in the Normal Flow are available during the CPM Group Session.

Alternatively, Participants of the CPM Group Session may have pre-configured settings and authorisations for CPM Group Sessions. For example, Bob's terminal is a high-speed access capable terminal with a lot of memory and Bob has set his terminal to automatically accept any file transfer request from his friends. He has also set automatic answer for all half-duplex voice requests from his friends.

5.4.7 Operational and Quality of Experience Requirements

- Slow-connection in one of the recipients' terminal should not affect other users.
- Limited capabilities of one of the recipients' terminals should not automatically cause limited capabilities available in the session.
- Easy UI and efficient mechanism in the network to dynamically modify the session parameters (change Media, Participants etc.).
- Easy and possibly automatic terminal configuration for taking the service into use and using the service.
- Ability for the user to see other Participants' availability and willingness for communication.
- Ability for the user to know that the communication is a group session and who are participating.

5.5 Group Communication with Group Rules

5.5.1 Short Description

This use case describes a scenario where a user has created group information before the communication starts. The goal of this use case is to describe how the various rules facilitate group communication by using multiple features provided by the CPM Enabler. The group information is stored in the network and contains generic information about the group, members of group, different kind of rules to be applied e.g. regarding Participants when certain criteria are met, and rules for Media control.

5.5.2 Actors

The involved actors are:

- Owner of group: Alice
- Participants: Alice, Bob, David, Carol, Macy and Ted
- Service provider

5.5.2.1 Actor Specific Issues

None identified.

5.5.2.2 Actor Specific Benefits

The benefits for the owner and/or creator of group are:

- Owner can pre-define group members and CPM Group Membership Rules for group communication.
- Owner can define Media rules, e.g. control for simultaneous streaming Media.
- Owner can re-use the pre-defined group information several times.

The benefits for the Participants are:

- Media control helps Participants to communicate.
- Depending on the group information and access rights, the Participants may have additional information about the group.
- The Participants may get information about the CPM Group Session beforehand.

The benefits for the service provider are:

- Service provider can reduce (real-time) signalling load in air interface when most of the CPM Group Membership Rules and actions can be pre-defined.
- Service provider can offer value for owner e.g. since the owner can store group information at the network.

5.5.3 Pre-conditions

The required pre-conditions are:

- The owner of the group has capabilities and permission to create a group definition.

5.5.4 Post-conditions

The required post-conditions are:

- Participants are able to continue their meeting until the ending criteria is met.
- Any Participant is able to re-join a CPM Group Session depending on the CPM Group Membership Rules and status of the CPM Group Session.
- Additional Participants can be invited depending on the CPM Group Membership Rules and status of the CPM Group Session.

5.5.5 Normal Flow

The normal flow for this use case is:

- 1) Alice wants to have monthly meetings with her colleagues. She creates a group, lists its members, and defines the subject, the type of the group, the timing, and other useful information. She also sets the CPM Group Membership Rules, and rules for Media control so that all the Participants' video streams are shown, all can speak, but only one can show material at a time.
- 2) When the meeting start time is met the group members who satisfy the CPM Group Membership Rules will receive invitations for the meeting, and are allowed to join the meeting by accepting the invitation, and selecting Media from offered ones.
- 3) Alice, Bob and Carol accept the invitation, and can get to know other Participants in the CPM Group Session.
- 4) When Alice starts her introductory presentation others depending on their Media choice can see her presentation material. All Participants are able to see each others' video streams, and all the Participants are also able to speak during the presentation.
- 5) Bob knows that Ted wants to join later, so Bob invites Ted when Ted is available for the meeting.
- 6) Carol thinks that the meeting would be useful also for David, and decides to invite him, but the invitation gets rejected.
- 7) After Alice's presentation, Alice stops showing her material, and Bob is able to show his material.

5.5.6 Alternative Flow 1 – Designated Owner

Alternatively, the functionality could be the following:

- 1) A secretary of Alice can create the group on behalf of Alice.
- 2) The secretary defines the Media rules so that only the speaker's video is shown, or only one Participant is allowed to speak at a time in addition to the host of the meeting. The secretary also sets Alice to be the host and moderator of the meeting.

- 3) The meeting invitations are sent after Alice has joined in and the meeting start criteria have been met.
- 4) Ted has the requested participation information and so is able to join in the meeting later whenever he is available for the meeting.
- 5) Alice wants to send files to other Participants, and needs to change Media offering accordingly during the meeting.
- 6) After Alice's presentation Alice as a moderator gives the floor to Bob.

5.5.7 Alternative Flow 2 – Pre-defined Group

Alternatively, the functionality could be the following:

- 1) Alice who is a manager of a department creates group 1 which contains several project members. Some members belong to multiple projects. This group is used for project meeting purpose. She sets CPM Group Membership Rules to invite 'Project A' members to have a meeting.
- 2) Alice establishes the CPM Group Session with group members who satisfy the defined CPM Group Membership Rules. Accordingly Carol, Ted and Macy who satisfy the CPM Group Membership Rules will receive invitations, and are allowed to join the discussion by accepting the invitation.
- 3) Carol, Ted and Macy accept the invitation, and can get to know other Participants in the CPM Group Session.
- 4) Alice starts to discuss the project plan with all the Participants.
- 5) After the meeting Alice gets second thoughts about who should attend the next project meeting and wants to invite only the software people among the staff members of group 1. Then, she would first create a CPM Group Membership Rule to group 1 and then start a session. The CPM Group Membership Rule evaluation would result in staff members Carol and Macy being invited (Ted is the hardware guy).

5.5.8 Operational and Quality of Experience Requirements

None.

5.6 Network-based Storage

5.6.1 Short Description

The user can have multiple devices and use different type of messaging. This use case describes how converged messaging can ensure a consistent user experience by providing network-based storage for messages and Media.

5.6.2 Actors

Alice: the user that uses the converged messaging service, who shares her stored Media with Claire.

Bob: the user that uses the converged messaging service, who sends pictures and videos of his holidays to Alice.

Claire: the user that uses the converged messaging service.

5.6.2.1 Actor Specific Issues

Alice is at home and is working on her PC (CPM capable device). Alice wants to store CPM Conversation histories (aka store CPM Messages and CPM Session Histories) on her network-based storage. She also wants to store videos in her network-based storage. She is able to access this network-based storage to retrieve the messages or Media, and she is able to forward them to Claire.

Bob wants to share with Alice some photos of his holidays and sends her a message with these pictures. He must have a CPM capable device.

Claire has a conversation with Alice within a CPM Session. She must have a CPM capable device.

The CPM System, based on Alice's preferences, stores CPM Messages, CPM Session Histories and Media in Alice's network-based storage in the CPM service provider domain.

5.6.2.2 Actor Specific Benefits

Alice can store and access CPM Threads in a network-based storage in the CPM service provider domain.

Alice can store and access Media in a network-based storage in the CPM service provider domain.

Bob can store and access CPM Threads in a network-based storage in the CPM service provider domain.

5.6.3 Pre-conditions

Alice, Bob and Claire are both provisioned to use the converged messaging service.

Alice, Bob and Claire's devices are registered with the CPM System.

All users are able to set preferences on how to display Media objects on their devices.

The CPM System knows how to adapt Media objects based on, e.g. device identity, device capabilities.

5.6.4 Post-conditions

Alice is able to retrieve from her network-based storage messages and/or Media she has locally deleted on her PC.

She is able to share with others messages and Media stored in her network-based storage in the CPM service provider domain.

5.6.5 Normal Flow – Messages Storage

- 1) Bob just came back from holidays and wants to share some pictures with Alice.
- 2) Bob composes a CPM Message adding some text (e.g. a short subject and some body text) and attaching the most beautiful pictures he took, selects Alice from his address book and then sends the message.
- 3) Bob's CPM System then verifies that Bob has the rights (e.g. if he has enough credit on his account) to submit this message, and forwards the message to Alice's CPM System.
- 4) Bob has set his preferences so that Bob's CPM System stores the message in the sentbox of Bob's network-based storage in the CPM service provider domain. Bob is able to synchronise any of his devices' sentboxes with his network-based storage's sentbox.
- 5) Alice's CPM System checks Alice's profile for availability and her user preferences and for the device(s) that should receive the message, and then sends Bob's CPM Message to Alice on her PC.
- 6) Alice has set her preferences so that Alice's CPM System stores Bob's message in Alice's network-based storage in the CPM service provider domain.
- 7) After reading the message, Alice decides to delete the message locally on her PC.
- 8) A few days later, Alice discusses with her friend Claire and talks about Bob's holidays. She would like to show Bob's message to Claire.
- 9) Alice accesses the message Bob sent her a few days ago in her network-based storage in the CPM service provider domain.
- 10) Alice requests the CPM System to forward Bob's message to Claire directly from her network-based storage. Alice is also able to request the retrieval of Bob's message to have a local copy on her PC.
- 11) Alice's CPM System forwards the message to Claire's CPM System which then sends it to Claire.

- 12) Alice and Claire continue their conversation regarding Bob's message.

5.6.6 Alternative Flow – Media Storage

- 7) Alice is amazed by Bob's pictures and wants to discuss with him about his holidays. She initiates a CPM Session to have a text conversation with him by interacting with the CPM System from her PC.
- 8) Bob is notified of the incoming request and accepts the CPM Session request.
- 9) Bob and Alice start their CPM Session.
- 10) During the conversation, Bob decides to send some videos to Alice.
- 11) Alice has set her preferences to store the CPM Session History with all the exchanged Media such as Bob's videos in her network-based storage in the CPM service provider domain. The CPM Session History and the videos are stored on Alice's network-based storage.
- 12) A few days later, Alice is having a text conversation with her friend Claire about Bob's holidays. She would like to send her Bob's videos that are of interest for Claire.
- 13) Alice accesses the videos in her network-based storage in the CPM service provider domain.
- 14) Alice requests the CPM System to send the videos to Claire within the current CPM Session. Alice is also able to request the retrieval of these videos to have a local copy on her PC. Alice is also able to request to send to Claire the CPM Session History of her discussion with Bob including the videos.
- 15) Claire sees the videos and continues the conversation with Alice.
- 16) Alice wants to show to Claire how Bob got tanned during his holidays. She composes a message and adds a picture of Bob at home she had locally on her computer. Then she accesses Bob's pictures in her network-based storage in the CPM service provider domain to add one of Bob's pictures. She can request the CPM System to download a preview of the pictures stored in her network-based storage to help her choose.
- 17) Alice requests the CPM System to send the message with both pictures so that Claire is able to compare Bob before and after his holidays.

5.6.7 Alternative Flow – Message Storage Management

- 1) Alice would like to see the list of messages exchanged with Bob in the last three days.
- 2) Alice requests the CPM System to display this list of messages stored in her network-based storage in the CPM service provider domain.
- 3) The CPM System delivers the requested information to Alice's PC which then displays the list of messages with some details about them (e.g. size, date, etc).
- 4) Alice then requests to create a new folder "Friends". The CPM System creates the folder. The view of Alice's network-based storage is refreshed on her PC to show the new folder in the network-based storage's view.
- 5) Alice requests to move all Bob's messages that were exchanged within the last three days to the "Friends" folder. The CPM System then moves each message to that folder. The view of Alice's network-based storage is refreshed on her PC to show the new network-based storage organization.
- 6) Alice requests to open the "Friends" folder. The list of Bob's messages of this folder is then displayed on Alice's PC.
- 7) Alice selects the first message and requests to delete it. The CPM System then deletes the message. The view of Alice's network-based storage is refreshed on her PC to show the new list of messages included in the "Friends" folder.
- 8) Alice has the history of her conversation with Claire on her PC. She would like to keep it in her network-based storage.

- 9) Alice requests the CPM System to store that conversation history in the "Friends" folder of her network-based storage in the CPM service provider domain.
- 10) The CPM System updates Alice's network-based storage to add the conversation history in the "Friends" folder of Alice's network-based storage.

5.6.8 Alternative Flow – Media Storage Management

- 1) Alice would like to see Bob's pictures and videos which are stored in her network-based storage in the CPM service provider domain.
- 2) Alice requests the CPM System to see the list of pictures and videos stored in the folder "Bob's holidays" of her network-based storage.
- 3) The CPM System responds to the request from to Alice's PC which then displays the list of pictures and videos with some details about these files (e.g. thumbnails, previews, size, date ...).
- 4) Alice then requests to create two new folders within "Bob's holidays" folder: "pictures" and "videos". The CPM System creates both folders. The view of Alice's network-based storage is refreshed on her PC to show the two new folders in addition to the pictures and videos of the "Bob's holidays" folder.
- 5) Alice requests to move all pictures to the "pictures" folder and all videos to the "videos" folder. The CPM System then moves each file to the corresponding folder. The view of Alice's network-based storage is refreshed on her PC to show only the two folders included in the "Bob's holidays" folder.
- 6) Alice requests to open the "pictures" folder. The list of pictures of this folder is then displayed on Alice's PC.
- 7) Alice selects "picture1.jpg" and requests to delete it. The CPM System then deletes the Media file. The view of Alice's network-based storage is refreshed on her PC to show the new list of pictures included in the "pictures" folder.
- 8) Alice has some pictures on her PC that she took when she was on holidays with Bob. She would like to save them on her network-based storage.
- 9) Alice requests the CPM System to store the pictures in the "pictures" folder of "Bob's holidays" folder of her network-based storage in the CPM service provider domain.
- 10) The CPM System updates Alice's network-based storage to add the pictures in the requested folder of Alice's network-based storage.

5.6.9 Alternative Flow – Media Sharing

- 1) Alice would like to share with Bob some pictures she has just taken. So she requests to upload the pictures and indicates that she wants to give Bob permission to see them.
- 2) The CPM System stores the pictures in Alice's network-based storage and notifies Bob that Alice has shared some Media with him.
- 3) Alice decides to share with Bob the pictures from the last holidays as well. So she accesses her network-based storage, selects the folder "holidays" and requests to give Bob permission to see this folder and its content.
- 4) The CPM modifies the permissions associated with that folder in Alice's network-based storage and notifies Bob.
- 5) Bob accesses Alice's network-based storage. He can see the list of Media and folders that Alice has shared with him. He can display or download Alice's pictures.
- 6) Alice would also like that John shares the pictures he took in the last holidays they spent together. So she accesses her network-based storage, selects the folder "holidays" and requests to give John permission to see and modify this folder.
- 7) The CPM modifies the permissions associated with that folder in Alice's network-based storage and notifies John.

- 8) John accesses Alice's network-based storage. He can see the list of Media and folders that Alice has shared with him. He can display or download Alice's pictures as well as upload additional pictures to the "holidays" folder.

5.6.10 Operational and Quality of Experience Requirements

A user shall be able to store any type of CPM Messages or CPM Session Histories in a network-based storage in the CPM service provider domain.

A user shall be able to store Media in a network-based storage in the CPM service provider domain.

A user shall be able to search for Media, CPM Messages or CPM Session Histories stored in a network-based storage in the CPM service provider domain.

5.7 Seamless Interworking between a CPM User and a Non-CPM Communication Service User

5.7.1 Short Description

This use case describes interworking scenarios between a CPM User and a Non-CPM Communication Service user.

5.7.2 Actors

Mary: A CPM User.

Peter: A non-CPM User.

5.7.2.1 Actor Specific Issues

Mary wants to be able to use the CPM Service to interact with (e.g. send/receive messages to/from) other users, without having to know the capabilities of these others' handsets and the messaging technology these others are using.

Peter wants to be able to use the Non-CPM Communication Service to interact with (e.g. receive messages from) others, regardless of the messaging technology these others are using.

Peter should be able to communicate (message exchange) with Mary.

5.7.2.2 Actor Specific Benefits

Mary is able to use the CPM Service to interact with (e.g. send/receive messages to/from) people using devices with a messaging client of a Non-CPM Communication Service.

Mary is relieved of the burden of selecting herself the messaging technology that needs to be used.

Mary can access all her received messages from the CPM-enabled device.

Peter is able to use the Non-CPM Communication Service to interact with (e.g. send/receive messages to/from) people using the CPM Service.

5.7.3 Pre-conditions

Mary has a device that can access the CPM Service.

Peter has a device with a messaging client for a Non-CPM Communication Service.

5.7.4 Post-conditions

Requests or messages sent to Peter by Mary are correctly received by Peter.

Requests or messages sent to Mary by Peter are correctly received by Mary.

5.7.5 Normal Flow – Exchanging Messages

- 1) Mary decides to send a message to Peter, and composes a message. From the address book she selects Peter to be the recipient and sends the message to the CPM Service within Mary's CPM service provider domain.
- 2) The CPM System in Mary's CPM service provider domain forwards the message to the CPM System in Peter's CPM service provider domain.
- 3) The CPM System in Peter's CPM service provider domain detects that Peter is not registered with the CPM Service, but uses a non-CPM messaging client and therefore forwards the message to the appropriate messaging server handling the Non-CPM Communication Service of Peter's messaging client.
- 4) The messaging server handling the Non-CPM Communication Service of Peter's messaging client forwards the message to Peter's device.
- 5) Peter receives the message at his messaging client. Mary can also send multiple messages in a row (e.g. "Hi Peter" and "Are you there?"). Following the same flow as above, Peter receives the messages in the order sent by Mary at his messaging client.
- 6) After a while, Peter decides to send a message to Mary, and composes a message within his messaging client of the Non-CPM Communication Service. From the address book, he selects Mary to be the recipient. Upon selecting the send option, the messaging client submits the message to the Messaging server associated Peter's messaging client.
- 7) The messaging server associated with Peter's messaging client forwards the message to its peer that is servicing Mary.
- 8) Mary's messaging server detects that Mary is able to use the CPM Service and therefore forwards the message to the CPM System in Mary's CPM service provider domain.
- 9) The CPM System in Mary's CPM service provider domain forwards the message to Mary's CPM-enabled device.
- 10) Mary's CPM-enabled device displays the message to Mary. If Peter's message is a reply to a message sent previously by Mary, Mary's CPM-enabled device detects it and displays the reply message in a threaded view if required by Mary's preferences.
- 11) Peter can also send multiples messages in a row (e.g. "Hi Mary" and "Are you there?"). Following the same flow as above, Mary receives the messages in the order sent by Peter at her CPM-enabled device.

5.7.6 Alternative Flow – CPM User Sending a CPM Session Invitation

- 1) Mary decides to send a CPM Session Invitation to Peter, so she selects Peter from the address book and sends the invitation to the CPM System within Mary's CPM service provider domain.
- 2) The CPM System in Mary's CPM service provider domain forwards the request to the CPM System in Peter's CPM service provider domain.
- 3) The CPM System in Peter's CPM service provider domain detects that Peter is not registered with the CPM Service, but uses a non-CPM messaging client and therefore sends on behalf of Mary an adapted session invitation to the appropriate messaging server handling the Non-CPM Communication Service of Peter's messaging client.
- 4) The messaging server handling the Non-CPM Communication Service of Peter's messaging client forwards the request to Peter's device.
- 5) Peter receives the session invitation at his messaging client. Peter accepts the request.
- 6) Peter's device sends Peter's response to the non-CPM messaging server, which forwards it to the CPM System in Peter's CPM service provider domain.

- 7) The CPM System in Peter's CPM service provider domain detects that this is a response to an invitation previously sent by Mary and therefore converts it to a CPM response before sending it to Mary's CPM-enabled device through the CPM System in Mary's CPM service provider domain.
- 8) Mary's CPM-enabled device receives Peter's response and announces it to Mary.

NOTE: If the Non-CPM Communication Service does not support sessions and invitations, the CPM System will auto-accept the CPM invitation on behalf of Peter, deny the session/invitation, or convert the invitation to an inviting message sent to the non-CPM User, based on service provider policies.

5.7.7 Alternative Flow – CPM User Receiving an Invitation

- 1) Peter decides to start a session with Mary, so he selects Mary from the address book and sends the request to the non-CPM messaging server in Peter's service provider domain.
- 2) The non-CPM messaging server in Peter's service provider domain forwards the request to the CPM System in Mary's CPM service provider domain.
- 3) The CPM System in Mary's CPM service provider domain detects that Mary is registered with the CPM Service and therefore converts it to a CPM invitation request before sending it to Mary's CPM-enabled device.
- 4) Mary receives the invitation request at her messaging client. Mary accepts the request.
- 5) Mary's device sends Mary's response to the CPM System in Mary's CPM service provider domain, which sends an adapted response to the non-CPM messaging system in Peter's service provider domain.
- 6) The messaging server handling the Non-CPM Communication Service of Peter's messaging client forwards the response to Peter's device.
- 7) Peter's device receives Mary's response and announces it to Peter.

5.7.8 Operational and Quality of Experience Requirements

A CPM User should not have to select the exact message-delivery technology.

5.8 Multiple CPM Addresses

5.8.1 Short Description

This use case describes how the CPM Service allows a user to:

- Have several independent CPM Addresses. For example, a user could have a personal CPM Address and a professional CPM Address.
- Register all his CPM Addresses at the same time on a single CPM-enabled device bound to those CPM Addresses.
- Have an independent environment related to each address (i.e. address book, Media storage, etc.).
- Configure his preference settings on a per-address basis.

5.8.2 Actors

Bob – An end user that uses the CPM Service and has subscribed to several CPM Addresses.

Alice (Bob's sister) – An end user that uses the CPM Service.

John (Bob's colleague) – An end user that uses the CPM Service.

5.8.2.1 Actor Specific Issues

Bob would like to use the CPM Services for business and personal purposes. He would like to have two distinct CPM Addresses with different preference settings and network-based storage. However, he would prefer to have only one handset instead of two.

Alice (Bob's sister) would like to send a message to Bob regarding family issue.

John (Bob's colleague) would like to send an urgent message to Bob regarding their current business project.

5.8.2.2 Actor Specific Benefits

Bob is able to use a single handset with two different CPM Addresses and environments. He can also configure both CPM Addresses with different preference settings.

Alice (Bob's sister) can contact Bob on his personal address.

John (Bob's colleague) can contact Bob on his business address.

5.8.3 Pre-conditions

Bob, Alice and John subscribed to the CPM Services and have a CPM Client on their handset.

Bob made an agreement with his service provider to get two different CPM Addresses within the same CPM subscription. He has hence two CPM Addresses:

- CPM Address A: a personal address to communicate with his family and friends.
- CPM Address B: a professional address to communicate with his colleagues.

5.8.4 Post-conditions

Bob is able to differentiate messages from colleagues with messages from family or friends. Each CPM Address can be related to a different environment with its own preference settings and address book. A message from a colleague will make the handset ring while a message from his family will make it vibrate.

Alice is able to send a message to Bob regarding family issue without disturbing him.

John is able to send an urgent message to Bob regarding business issue.

5.8.5 Normal Flow

- 1) Bob switches on his device and since both his personal and business CPM Addresses are bound to that device, it presents two separated and independent environments (two preference setting menus, two contact lists, etc.).
- 2) He stores his contacts into his address books:
 - He adds family and friends contacts in the address book A.
 - He adds professional contacts in the address book B.
- 3) Alice is Bob's sister. He then adds her address in his personal address book (A).
- 4) John is one of Bob's colleagues. He then adds John's address in his corporate address book (B).
- 5) Bob gives his CPM Address-A to Alice. She stores Bob's entry in her address book as "Bobby".
- 6) Bob gives his CPM Address-B to John. John hence stores Bob's entry in his address book as "Bob".
- 7) The day after, Bob is at office and has to attend an important meeting. He still wants to be notified in case a colleague tries to reach him, but he prefers not to disturb the audience with personal issues. Hence, he configures his device this way:

- He invokes the preference setting menu A and sets the incoming message notification to “vibrate” for his personal address book contacts.
 - He invokes the preference setting menu B and sets the incoming message notification to “ring” for his business address book contacts.
- 8) During the meeting, John sends Bob a message containing a crucial question to ask a particular attendee. Bob hears his device ringing and he is able to know the message comes from a contact listed in address book B. He checks his phone and gets the information.
 - 9) Alice wants to discuss with Bob regarding their mother’s birthday. She then selects the entry “Bobby” and sends him a message “Did you buy a present for Mummy?” Bob feels his device vibrating and he is aware that a contact listed in address book A sent him a message. He decides to wait for the end of the meeting.
 - 10) After the meeting, Bob reads Alice’s message and wants to reply. He hence presses the “Reply” button, composes a message “Yes, I did” and selects “Send”. The message is sent using CPM Address-A.
 - 11) Alice receives the messages and identifies the sender as “Bobby”.

5.8.6 Alternative Flow

None.

5.8.7 Operational and Quality of Experience Requirements

None identified.

5.9 Converged Address Book

5.9.1 Short Description

The user can have multiple devices and needs to have a single address book across all his devices. This use case describes how converged messaging can ensure a consistent user experience by providing synchronisation of all the information of the address book on all the user's devices.

5.9.2 Actors

Alice: a user that uses the converged messaging service, who has several devices.

Bob: a user that uses the converged messaging service, who has several devices.

5.9.2.1 Actor Specific Issues

Alice has three devices: a mobile, a PDA, and a PC. She is on her PC and she wants to reorganize her address book (change display names, organise the contacts into groups...).

Bob has two devices: a mobile and a PC. He is first connected on his mobile device, then he is connected also on his PC and wants his friends to know what Communication Capabilities are available to contact him at any time based on what is supported by his device(s) and his own preferences.

5.9.2.2 Actor Specific Benefits

Alice can organize her address book on one device, and all the modifications are automatically made available on the other devices. She can access the same information from a new device, or even from a web page in a cyber cafe.

Alice is aware of the Communication Capabilities supported by her contacts and their User Communication Preferences to initiate appropriate communications with them.

Bob is able to suggest to others how they should contact him in different situations.

5.9.3 Pre-conditions

Alice, Bob are both provisioned to use the converged messaging service.

Alice and Bob's devices are registered with the CPM System.

5.9.4 Post-conditions

Alice is able to update her address book on one device and the modification is automatically reflected in the address book on the other devices.

5.9.5 Normal Flow

- 1) Alice is working on her PC. She wants to reorganize her address book.
- 2) She selects the contact named "Bob" and requests to change the display name to "Bobby" instead.
- 3) Once Alice has validated the modification on her PC, the modification is automatically reflected on Alice's other devices.
- 4) Alice decides to subscribe to Bob's Presence Information from her PC. Based on Alice's subscription request, Bob's presence status is automatically reflected on her PDA and her mobile.
- 5) Once the subscription is accepted by Bob, Alice is notified of Bob's Presence Information on all of her devices.
- 6) Alice has a group named "Friends" in her address book. Alice has three contacts in this group: Claire, David and Eric.
- 7) Alice requests to add Bob to this group. Bob then appears as "Bobby" under the group named "Friends" in the address book.
- 8) Once Alice has validated the modification on her PC, the modification is automatically reflected in the address book on Alice's other devices.
- 9) Alice wants to initiate a conversation with her group "Friends". She can see the Communication Capabilities of each member of the group and their User Communication Preferences.
- 10) So Alice selects the group name "Friends" on her address book and starts a text conversation.
- 11) At this time of the conversation, Bob is only available on his mobile. Bob then connects also to his PC later on.
- 12) Alice sees in her address book that the information about her friend "Bobby" has been updated. Bob appears available with capability to receive streamed videos. This information is also automatically updated on Alice's other devices' address books.
- 13) Alice then decides to share a streamed video with Bob by selecting "Bobby" in her address book under "Friends" group while continuing her conversation with the group.

5.9.6 Alternative Flow

- 1) Alice purchases a new mobile device which is added to her CPM Service subscription.
- 2) Alice's new device is able to synchronize with Alice's address book data stored on the network.
- 3) Alice's environment is restored on the new device: static contact information, group definitions, User Communication Preferences, Presence Subscriptions, etc., are recovered on the new device.

5.9.7 Operational and Quality of Experience Requirements

A user shall be able to know the Communication Capabilities supported by his contacts in his address book.

A user shall be able to add/delete/modify contacts in the address book of one of his devices and the modification is made available on all the other devices.

5.10 Absence Service

5.10.1 Short Description

This use case describes a scenario where an external answering service creates and delivers a message into the CPM System for end-user receipt and disposition.

5.10.2 Actors

Anne: A user that is using the CPM Service, who has subscribed to the absence service.

Bob: A user that is using the CPM Service.

5.10.2.1 Actor Specific Issues

Anne:

- wants her CPM Service to include a list of messages from an absence service.
- wants to receive notification of new messages from an absence service on all devices she is active on.
- wants to retrieve, respond and optionally delete the message on the most convenient available device.
- wants the message, if deleted, to be deleted from the message list on all active devices.

Bob:

- wants to contact Anne using CPM Services, and to leave a message if Anne is unavailable, including accustomed features of undisclosed sender, urgency, and privacy indication.

5.10.2.2 Actor Specific Benefits

Anne does not have to consult multiple clients to review her messages.

Anne can manage her messages including delete, reply, and forward using the same user interface as she can for all other messages.

5.10.3 Pre-conditions

Service provider has deployed an absence service Application in conjunction with the CPM System.

Anne has subscribed to CPM Service from her service provider.

Anne's CPM Client allows her to view her list of messages and play them back.

5.10.4 Post-conditions

Anne has received a notification on all her devices and has retrieved and reviewed her new messages.

5.10.5 Normal Flow

- 1) Anne normally uses her laptop device at work. All CPM Message notifications destined for Anne are delivered to this laptop device. However, during the morning, Anne has activated her absence service for all incoming sessions (including voice calls and text chat sessions).
- 2) Bob attempts to initiate an IM session with Anne. Since Anne is unavailable, the session invite is redirected to her absence service. The absence service responds with a greeting and records the text typed by Bob. As part of that Application, Bob is prompted to supply an alternate reply address and to select one or more message options. Bob marks the message as "Urgent & Private". The absence service delivers the message to the CPM System, which deposits the message into Anne's network-based storage.
- 3) Anne receives notification of the new message on the CPM Client of her laptop and mobile phone and the recorded message is listed in her message list as well as a visual new message indicator.
- 4) Anne selects the new message icon on the CPM mobile device.
- 5) The CPM System displays the message contents to Anne on her mobile device.
- 6) Anne chooses to initiate a response based on the reply address left by Bob, and stores the message on her mobile device.
- 7) The CPM System synchronizes the store action completed on her mobile device with the network-based storage.

5.10.6 Alternative Flow

None.

5.10.7 Operational and Quality of Experience Requirements

Notification of new messages should appear "instantly" on all registered devices.

6. Requirements (Normative)

6.1 High-Level Functional Requirements

Label	Description	Enabler Release
CPM-HLF-001	The CPM Enabler SHALL allow an integrated user experience centred around CPM Conversations.	CPM V1.0
CPM-HLF-002	The CPM Enabler SHALL provide the CPM User with a mechanism to set preferences based on: <ul style="list-style-type: none"> • his addresses • his devices • the message type • the Media Types • the message priority 	CPM V1.0
CPM-HLF-003	The CPM Enabler SHALL allow the inclusion of URI schemes in a CPM Message.	CPM V1.0
CPM-HLF-004	The CPM Enabler SHALL allow the CPM User to initiate a CPM Conversation using a CPM Address.	CPM V1.0
CPM-HLF-005	The CPM Enabler SHALL allow the CPM User to initiate a CPM Conversation with a non-CPM User using an appropriate address.	CPM V1.0
CPM-HLF-006	The CPM Enabler SHALL allow the CPM User to attach a subject to a CPM Message or a CPM Session Invitation.	CPM V1.0
CPM-HLF-007	The CPM Enabler SHALL support the use of privacy indications.	CPM V1.0
CPM-HLF-008	The CPM Enabler SHALL support the use of priority indications.	CPM V1.0
CPM-HLF-009	The CPM Enabler SHALL allow an Authorized Principal to request that its identity is not disclosed to the recipient of the CPM Messages and CPM Sessions initiated by it, if allowed by service provider policies.	CPM V1.0
CPM-HLF-010	The CPM Enabler SHALL allow a CPM User sending a message, to specify one or more reply CPM Address(es) distinct from the CPM Address used to send the CPM Message.	CPM V1.0
CPM-HLF-011	The CPM Enabler SHALL support identification of the source CPM Address of received CPM Messages and CPM Session Invitations.	CPM V1.0
CPM-HLF-012	The CPM Enabler SHALL be able to reject a CPM Message or a CPM Session Invitation based on the recipient user's preferences, e.g. originator address (blacklist), undisclosed sender identity, or message type/content.	CPM V1.0
CPM-HLF-013	The CPM User SHALL be able to set and manage his preferences within multiple User Preferences Profiles. User Preferences Profiles may be created according to different scenarios, such as Home, Office, Travel, Sleep, Meeting etc.	CPM V1.0
CPM-HLF-014	The CPM User SHALL be able to indicate one of the multiple User Preferences Profiles as an active profile for each of his addresses and/or devices, even if the profile was created using a different device.	CPM V1.0
CPM-HLF-015	The CPM Enabler SHALL allow the CPM User to set his User Communication Preferences. Examples of scope of settings: <ul style="list-style-type: none"> • Settings applying to all the devices that he chooses • Individual settings per device • Per contact or category of contacts The settings can be grouped inside the User Preferences Profiles.	CPM V1.0

CPM-HLF-016	The CPM Enabler SHALL be able to expose a CPM User's Communication Capabilities to other Principals based on user preferences (e.g. to his contacts in the CPM User's address book).	CPM V1.0
CPM-HLF-017	The CPM Enabler SHALL be able to provide an Authorized Principal with the Communication Capabilities information for his contacts. This information MAY be obtained on a per subscription or on a per request basis (e.g. when initiating a CPM Session or a CPM Conversation). If Communication Capabilities are available, the Communication Capabilities MAY be made available to the CPM User's address books.	CPM V1.0
CPM-HLF-018	The CPM Enabler SHALL be able to provide an Authorized Principal with the User Communication Preferences for his contacts. This information MAY be obtained on a per subscription or on a per request basis (e.g. when initiating a CPM Session or a CPM Conversation). If User Communication Preferences are available, the User Communication Preferences MAY be made available to the CPM User's address books.	CPM V1.0
CPM-HLF-019	The CPM Enabler SHALL be able to expose to other Principals (e.g. his contacts in the CPM User's address book) a CPM User's preferred communication means. A user's preferred communication means are based on his User Communication Preferences and his Communication Capabilities.	CPM V1.0
CPM-HLF-020	The CPM Enabler SHALL be able to provide an Authorized Principal with the preferred communication means that his contacts expose. This information MAY be obtained on a per subscription or on a per request basis (e.g. when initiating a CPM Session or a CPM Conversation). If the preferred communication means of a CPM User's contact are available, the data MAY be made available to the CPM User's address books.	CPM V1.0
CPM-HLF-021	The CPM Enabler SHALL be allowed to send a CPM Message or initiate a CPM Session on behalf of a user (e.g. for scheduled conferencing).	CPM V1.0
CPM-HLF-022	The CPM User SHALL be able to request, on a per-message basis, to be notified of delivery or non-delivery of CPM Messages he/she has sent towards the recipient(s) independent of whether the recipient(s) are CPM Users or Non-CPM Users.	CPM V1.0
CPM-HLF-023	The CPM User SHALL be able to request to be notified when a CPM Message he/she sent is read by the recipient(s).	CPM V1.0
CPM-HLF-024	The CPM Enabler SHALL send a delivery notification and/or read report to the CPM Message originator, on a per-recipient basis, if requested by him/her and authorized by the CPM Message recipient.	CPM V1.0
CPM-HLF-025	The CPM Enabler SHALL support CPM Conversations between a CPM User and at least: <ul style="list-style-type: none"> • SMS users • MMS users • IMPS users • SIMPLE IM users • POC users • Email users • PSTN/PLMN voice users • PSTN/PLMN video users within the capabilities of the Non-CPM Communication Services.	CPM V1.0
CPM-HLF-026	The CPM Enabler SHALL allow the CPM User to use any type of connectivity, subject to service provider policies and the capabilities of the CPM enabled-network (e.g. to access his/her network-based storage).	CPM V1.0

CPM-HLF-027	The CPM Enabler SHALL provide an interface that would allow, under the control of the service provider, CPM functionality to be accessible by an Application.	CPM V1.0
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Table 1: High-Level Functional Requirements

6.1.1 Conversation

Label	Description	Enabler Release
Stand-alone Messaging:		
CPM-CONV-001	The CPM Enabler SHALL be able to deliver CPM Messages in immediate mode if the recipient is available and his preferences allow it.	CPM V1.0
CPM-CONV-002	The CPM Enabler SHALL allow CPM User to set preferences for the message handling mechanism used by the CPM Enabler in case the CPM User is not available for receiving the CPM Message (e.g. not registered in the home network, user does not wish to receive it immediately), e.g.: <ul style="list-style-type: none"> Discard the CPM Message while providing a notification to the sender based on service provider policies and sender's preferences Defer the CPM Message Store the CPM Message in the network-based storage Deliver the message via a Non-CPM Communication Service, via interworking 	CPM V1.0
CPM-CONV-003	The CPM Enabler SHALL defer CPM Message delivery according to service provider policies (e.g. hold for specific time period, hold only a certain number of messages) and based on user's preferences.	CPM V1.0
CPM-CONV-004	The CPM Enabler SHALL be able to modify a CPM Message (e.g. content adaptation and/or content removal) based on recipient's preferences (e.g. device settings), Communication Capabilities, and/or service provider's policies.	CPM V1.0
CPM-CONV-005	The CPM Enabler SHALL be able to re-direct an incoming CPM Message to any address based on the user defined preference/settings, Communication Capabilities, and service provider policies, relating to Media Types and/or content adaptation.	CPM V1.0
CPM-CONV-006	The CPM Enabler SHOULD allow CPM User to set preferences for storing the CPM Messages based on the Media forms (e.g. store text and voice messages but delete video messages or streams).	CPM V1.0
CPM-CONV-007	A Deferred Message SHALL either be automatically delivered when the CPM User is available, or the CPM User SHALL be notified for possible retrieval by the CPM User.	CPM V1.0
CPM-CONV-008	The CPM Enabler SHALL support the CPM User's request to be reminded about Deferred Message(s), subject to service provider policy.	CPM V1.0
CPM-CONV-009	In case of notification of an available CPM Message sent to the CPM User's device, the CPM Enabler SHALL allow the CPM User to retrieve all or part of the CPM Message.	CPM V1.0
CPM-CONV-010	The CPM Enabler SHALL provide mechanisms so that a CPM User can view CPM Messages in the order they are sent by another CPM User.	CPM V1.0
CPM Sessions:		
CPM-CONV-011	The CPM Enabler MAY support allowing/disallowing the sending of particular Media Types by individual Participants.	CPM V1.0
CPM-CONV-012	The CPM Enabler SHALL allow a Principal to invite another Principal to start or join a CPM Session by sending a CPM Session Invitation, if allowed by service provider policies.	CPM V1.0

CPM-CONV-013	The CPM Enabler SHALL allow a Principal to accept or reject a CPM Session Invitation he/she received.	CPM V1.0
CPM-CONV-014	The CPM Enabler SHALL be able, upon the Principal's preferences and service provider policies, to accept a CPM Session Invitation on behalf of the Principal.	CPM V1.0
CPM-CONV-015	The CPM Enabler SHALL ensure that the sender of a CPM Session Invitation receives an indication that the CPM Session Invitation was accepted by the CPM Enabler on behalf of the recipient.	CPM V1.0
CPM-CONV-016	The CPM Enabler SHALL be able to associate a validity period with a CPM Session Invitation.	CPM V1.0
CPM-CONV-017	The CPM Enabler SHALL leverage the capabilities (when available) of the underlying IP network to manage validity periods associated with a CPM Session Invitation, including notifying the originating and recipient CPM Users about the outcome of the CPM Session Invitation.	CPM V1.0
CPM-CONV-018	The CPM Enabler SHALL allow CPM User to initiate a CPM Session with selected Media.	CPM V1.0
CPM-CONV-019	The CPM Enabler SHALL allow a CPM User to join or rejoin an ongoing CPM Group Session if the set of CPM Group Membership Rules for the CPM Group are satisfied (e.g. excluding banned users).	CPM V1.0
CPM-CONV-020	The CPM Enabler SHALL provide a mechanism to invite/remove/ban Participants to/from the ongoing CPM Group Session based on the CPM Group Membership Rules (e.g. limitation to conference initiator only).	CPM V1.0
CPM-CONV-021	The CPM Enabler SHALL provide an Authorized Principal with information about the Participants of a CPM Session (e.g., new Participant joins, Participant leaves, list of current Participants, CPM Session ends), whether or not the Authorized Principal is a current Participant.	CPM V1.0
CPM-CONV-022	The CPM Enabler SHALL allow for participation in a CPM Group Session using a Pseudonym depending on the CPM Group and service provider's policy.	CPM V1.0
CPM-CONV-023	The CPM Enabler SHOULD allow a CPM User to negotiate and use a unique Pseudonym when requesting to join anonymously in a CPM Group Session depending on the CPM Group and service provider's policy. For example, the negotiation process may reject forbidden or sensitive words.	CPM V1.0
CPM-CONV-024	The CPM Enabler SHOULD provide a mechanism for a CPM User to allow CPM Users to contact each other using Pseudonyms assigned to them for a CPM Group Session.	CPM V1.0
CPM-CONV-025	The CPM Enabler MAY provide the CPM User with a mechanism to renegotiate his/her Pseudonym during a CPM Group Session, subject to service provider policies. For example, the renegotiation process may reject forbidden sensitive words.	CPM V1.0
CPM-CONV-026	The CPM Enabler MAY allow an Authorized Principal to join a CPM Session in a "hidden mode"; that is, his/her presence in the communication and identity are not to be disclosed to other Participants, subject to service provider policies.	CPM V1.0
CPM-CONV-027	The CPM Enabler SHALL ensure that a Principal who has joined a CPM Session in "hidden mode" becomes a non-hidden Participant prior to sending CPM Messages and/or continuous Media from that Principal to the CPM Session.	CPM V1.0
CPM-CONV-028	The CPM Enabler SHALL allow a CPM User to get information (e.g. Participants, related Media) on the CPM Sessions (including CPM Group Sessions) he/she is currently participating in.	CPM V1.0
CPM-CONV-029	The CPM Enabler SHALL allow a CPM User to get information (e.g. a list) of the available Public Chat Rooms.	CPM V1.0

CPM-CONV-030	The CPM Enabler SHALL allow the CPM User to send a CPM Message during a CPM Session.	CPM V1.0
CPM-CONV-031	The CPM Enabler SHALL allow a CPM User to dynamically add/modify/remove continuous Media during a CPM Session, according to group and service provider policies.	CPM V1.0
CPM-CONV-032	The CPM Enabler SHALL allow the CPM User to accept/reject a request to add/modify/delete continuous Media to a 1-1 CPM Session received from the other Participant. In case of “accept”, the CPM Session SHALL be modified accordingly. In case of “reject”, the CPM Session SHALL be kept unchanged.	CPM V1.0
CPM-CONV-033	The CPM Enabler SHALL allow the CPM User to accept/reject a request to add/modify/delete continuous Media to a 1-N CPM Session received from the other Participants. The CPM Session SHALL be modified based on the group and provider’s policies, e.g.: <ul style="list-style-type: none"> • CPM Session is only modified if all Participants accepted the request (group policy). • CPM Session is only modified to those Participants who accepted the request. 	CPM V1.0
CPM-CONV-034	The CPM Enabler SHOULD allow the CPM User to automatically accept/reject a request to add/modify/delete continuous Media to a 1-N CPM Session received from the other Participants based on the Communication Capabilities and user preferences. In this case, the CPM Session is only modified to those Participants who accepted the request.	CPM V1.0
CPM-CONV-035	A CPM Enabler MAY allow a CPM User to set a preference for the delivery mechanism in case he is not available (e.g. not registered in the home network) for receiving a CPM Session: <ul style="list-style-type: none"> • Reject the CPM Session • Establish the CPM Session via a Non-CPM Communication Service, via interworking 	CPM V1.0
CPM-CONV-036	The CPM Enabler SHALL enable an Authorized Principal (e.g. conference centre recording facility) to store the CPM Session History for his participation in a given CPM Session, and on request, subsequently provide this CPM Session History to another Authorized Principal (e.g. an Authorized Principal who joins the CPM Session halfway through).	CPM V1.0
CPM Conversation (general)		
CPM-CONV-037	The CPM Enabler SHALL allow a CPM User to initiate CPM Conversations independently of the status and availability of the user's Presence Information.	CPM V1.0
CPM-CONV-038	The CPM Enabler SHALL support 1-1 and 1-N CPM Conversations.	CPM V1.0
CPM-CONV-039	The CPM Enabler SHALL allow the CPM User to handle several CPM Conversations in parallel according to Communication Capabilities and service provider policies.	CPM V1.0
CPM-CONV-040	The CPM Enabler SHALL provide the means to recognize CPM Messages and CPM Sessions as part of a CPM Conversation.	CPM V1.0
CPM-CONV-041	The CPM Enabler SHOULD allow the presentation of CPM Messages and CPM Sessions belonging to the same CPM Conversation in a conversational view in the CPM-enabled device according to the user’s preferences.	CPM V1.0
CPM-CONV-042	The CPM Enabler SHALL provide for the storage of the CPM Messages and CPM Sessions belonging to the same CPM Conversation into a CPM Thread on behalf of a Participant, limited to those elements associated with the CPM Conversation sent or received by that Participant.	CPM V1.0

CPM-CONV-043	The CPM Enabler SHOULD be able to present the stored CPM Messages and CPM Session Histories belonging to a CPM Thread in a threaded view according to the user's preferences. NOTE: This is the storage representation of the concept defined in CPM-CONV-041.	CPM V1.0
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Table 2: High-Level Functional Requirements – Conversation Items

6.1.2 Management of Deferred Messages with an Expiry Time

Label	Description	Enabler Release
CPM-DEF-001	The CPM Enabler MAY allow the originating user to associate an expiry time to a CPM Message.	CPM V1.0
CPM-DEF-002	The CPM Enabler SHALL allow the service provider to override the expiry time associated with a CPM Message, set by the originating user (e.g. reduce to a shorter time).	CPM V1.0
CPM-DEF-003	When the expiry time associated with a Deferred Message is reached the CPM Enabler SHALL take one of the following actions according to user preferences and/or service provider's policy: <ul style="list-style-type: none"> • Discard the CPM Message • Store the CPM Message in the network-based storage • Extend the expiry time of the CPM Message 	CPM V1.0

Table 3: High-Level Functional Requirements – Management of Deferred Messages Items

6.1.3 CPM Group Handling

Label	Description	Enabler Release
CPM-GRP-001	The CPM Enabler SHOULD allow an Authorized Principal to set or update values for parameters like group information and the CPM Group Membership Rules for a CPM Pre-defined Group.	CPM V1.0
CPM-GRP-002	The CPM Enabler SHALL apply the set of CPM Group Membership Rules (if any) to a CPM Group Session.	CPM V1.0
CPM-GRP-003	The CPM Enabler MAY allow an Authorized Principal to search for CPM Group Sessions based on given criteria about the CPM Group Session (e.g. time since the last message was sent in the CPM Group Session).	CPM V1.0
CPM-GRP-004	The CPM Enabler MAY allow an Authorized Principal to view all or a subset of the CPM Group information (e.g. CPM Group Membership Rules, list of Participants, etc.) based on service provider policies.	CPM V1.0
CPM-GRP-005	The CPM Enabler MAY allow an Authorized Principal to create a CPM Pre-defined Group on behalf of another Principal and transfer ownership rights over the group to that Principal.	CPM V1.0
CPM-GRP-006	The CPM Enabler MAY allow the following continuous Media specific floor control: <ul style="list-style-type: none"> • Media burst control based on the group's policies. 	CPM V1.0
CPM-GRP-007	The CPM Enabler MAY allow an Authorized Principal with a mechanism to ask for notifications of changes to the CPM Group Membership Rules of the groups he/she is part of, according to service provider's policy.	CPM V1.0
CPM-GRP-008	The CPM Enabler MAY provide a mechanism to send information about a CPM Pre-defined Group to CPM Group members, e.g. for purposes to advertise a newly created group.	CPM V1.0

Table 4: High-Level Functional Requirements – CPM Group Handling Items

6.1.4 Presence

Label	Description	Enabler Release
CPM-PRS-001	If Presence Information is available, the CPM Enabler SHALL be able to use that information to enhance the CPM user experience.	CPM V1.0
CPM-PRS-002	The CPM Enabler MAY support a set of CPM-specific presence parameters on behalf of the CPM Users that derive from different Communication Capabilities (e.g. video-busy).	CPM V1.0
CPM-PRS-003	The CPM Enabler SHALL be able to subscribe/unsubscribe a CPM User to one of his contacts' presence according to his active User Preferences Profile.	CPM V1.0

Table 5: High-Level Functional Requirements – Presence Items

6.1.5 Media Support

Label	Description	Enabler Release
CPM-MED-001	The CPM Enabler SHALL support discrete and continuous Media of at least the following kinds: <ul style="list-style-type: none"> • Text • Images • Binary files • Audio • Video 	CPM V1.0
CPM-MED-002	The CPM Enabler SHALL allow the sender of a CPM Message to indicate that a piece of discrete Media (e.g. audio clip or video clip) sent as part of the CPM Message is to be played immediately and automatically upon reception at the recipient end, if supported and enabled by the recipient user.	CPM V1.0
CPM-MED-003	The CPM Enabler SHALL allow an inviting CPM User to indicate a set of offered Media Types at the start of a CPM Session based on the Communication Capabilities of his/her device, user preferences, and service provider policies.	CPM V1.0
CPM-MED-004	The CPM Enabler SHALL allow an inviting CPM User to indicate which offered Media Types are the preferred Media Types in a CPM Session Invitation.	CPM V1.0
CPM-MED-005	The CPM Enabler SHALL support negotiation of Media Types.	CPM V1.0
CPM-MED-006	The CPM Enabler SHALL support a request from a sending Application not to perform content adaptation.	CPM V1.0
CPM-MED-007	The CPM Enabler SHALL support the simultaneous exchange of multiple continuous Media and/or CPM Messages in the same CPM Session.	CPM V1.0
CPM-MED-008	If two or more continuous Media are simultaneously exchanged in the same CPM Session, or if there is more than one CPM Conversation containing continuous Media in parallel, the CPM Enabler SHOULD provide the means to filter the continuous Media based on the user's preferences (e.g. session priority, listen to one voice/audio stream only), Communication Capabilities, and service provider's policy.	CPM V1.0

Table 6: High-Level Functional Requirements – Media Support Items

6.1.6 Network-based Storage

Label	Description	Enabler Release
CPM-STOR-001	The CPM Enabler SHALL allow CPM User to delete a stored CPM Message locally on one of his registered devices and keep the stored CPM Message in the network-based storage for later retrieval.	CPM V1.0

CPM-STOR-002	The CPM Enabler SHALL allow CPM Users to suppress automatic synchronization of locally-deleted CPM related content.	CPM V1.0
CPM-STOR-003	The CPM Enabler SHALL be able to store <ul style="list-style-type: none"> • CPM Messages • CPM Sessions as CPM Session Histories • CPM Conversations as CPM Threads • Media in the user's network-based storage according to the user's preferences and/or service provider's policy.	CPM V1.0
CPM-STOR-004	The CPM Enabler SHALL allow the CPM User to set preferences (e.g. enable/disable, filtering criteria) whether to automatically store CPM Messages, CPM Sessions, CPM Conversations and Media (e.g., when CPM Messages are received and sent) in his/her network-based storage.	CPM V1.0
CPM-STOR-005	The CPM Enabler SHALL allow the CPM User to manually store CPM Messages, CPM Sessions, CPM Conversations and Media from a CPM-enabled device to his/her network-based storage.	CPM V1.0
CPM-STOR-006	The CPM Enabler SHALL provide a CPM User with a mechanism to activate and deactivate on demand the storing of a CPM Session to his/her network-based storage during this CPM Session.	CPM V1.0
CPM-STOR-007	The CPM Enabler SHALL allow an Authorized Principal to process (e.g. download, upload, forward) Media independently of the stored CPM Message or the CPM Session History they were attached to.	CPM V1.0
CPM-STOR-008	The CPM Enabler SHALL support access (select, view, retrieve, etc.) to all <ul style="list-style-type: none"> • CPM Messages • CPM Sessions as CPM Session Histories • CPM Conversations as CPM Threads • Media stored in the user's network-based storage from any of the user's capable devices.	CPM V1.0
CPM-STOR-009	The CPM Enabler SHALL, according to the user's preferences (e.g. filtering criteria, enable/disable automatic synchronization) and/or the service provider's policy, support the synchronization of : <ul style="list-style-type: none"> • the stored CPM Messages or CPM Session Histories • the CPM Threads • the Media • the list of stored CPM Messages and/or CPM Session Histories and/or Media between the local storage of the CPM User's device(s) and CPM User's network-based storage.	CPM V1.0
CPM-STOR-010	The CPM Enabler SHALL allow the CPM User to forward CPM Messages and CPM Session Histories stored in his/her network-based storage (without downloading them to his/her device).	CPM V1.0
CPM-STOR-011	The CPM Enabler SHALL allow the CPM User to download all or part of a CPM Message that is stored in his network-based storage to his/her device.	CPM V1.0
CPM-STOR-012	The CPM Enabler SHALL allow the CPM User to download Media that is stored in his network-based storage to his/her device.	CPM V1.0
CPM-STOR-013	The CPM Enabler SHALL allow the CPM User to download a preview (e.g. a thumbnail) of Media stored in his network-based storage.	CPM V1.0
CPM-STOR-014	The CPM Enabler SHALL allow the management (e.g. creation, renaming, deletion, moving, copying) of folders in a CPM User's network-based storage by an Authorized Principal.	CPM V1.0

CPM-STOR-015	<p>The CPM Enabler SHALL allow an Authorized Principal to</p> <ul style="list-style-type: none"> • move between folders • add to folders • copy between/within folders • delete • rename • list with a filter based on some specific criteria (e.g. recipient, originator, date, stored in a specific folder...) <p>the following items residing in a CPM User's network-based storage:</p> <ul style="list-style-type: none"> • CPM Threads • stored CPM Messages • CPM Session Histories • Media 	CPM V1.0
CPM-STOR-016	<p>The CPM Enabler SHALL allow the CPM User to select:</p> <ul style="list-style-type: none"> • stored CPM Messages or CPM Session Histories, and/or • CPM Threads • Media <p>from his network-based storage (without downloading them to his device) and/or from his device's storage and add them to a CPM Message. When the CPM User subsequently requests for the CPM Message to be sent, the CPM Enabler SHALL be able incorporate into the CPM Message, the selected data from the CPM User's network-based storage (without downloading them to the sender's CPM User's device), according to user's preferences and/or service provider's policy.</p>	CPM V1.0
CPM-STOR-017	<p>The CPM Enabler SHALL be able to store Media from incoming CPM Messages in the network-based storage, and allow the CPM User to receive CPM Messages without the Media by including a link to access this Media in the network-based storage, based on user's preferences and service provider's policies.</p>	CPM V1.0
CPM-STOR-018	<p>The CPM Enabler SHOULD support a search function to allow an Authorized Principal to search in an efficient manner in the network-based storage for Media, stored CPM Messages, CPM Session Histories or CPM Threads residing in storage space to which he has permission for access.</p>	CPM V1.0
CPM-STOR-019	<p>The CPM Enabler SHALL allow an Authorized Principal to give permission to</p> <ul style="list-style-type: none"> • A limited set of Principals (whitelist) • To everybody <p>to access Media, CPM Threads, CPM Messages and CPM Session Histories, or to access and/or write in folders in his/her network-based storage.</p>	CPM V1.0
CPM-STOR-020	<p>The CPM Enabler SHALL allow an Authorized Principal to give permission over specific items (Media, CPM Threads, CPM Messages, CPM Session Histories, folders) either at the time of storage of these items to his/her network-based storage or at a later time.</p>	CPM V1.0
CPM-STOR-021	<p>The CPM Enabler SHALL allow an Authorized Principal to modify or revoke the permissions associated with specific items (Media, CPM Threads, CPM Messages, CPM Session Histories, folders) in his/her network-based storage.</p>	CPM V1.0
CPM-STOR-022	<p>The CPM Enabler SHALL allow an Authorized Principal to set a deadline after which a sharing permission to specific items (Media, CPM Threads, CPM Messages, CPM Session Histories, folders) in his/her network-based storage will be revoked automatically.</p>	CPM V1.0

CPM-STOR-023	The CPM Enabler SHALL allow an Authorized Principal to specify which permission attributes (e.g. read/write access, access deadline, list of Principals who have access permission) associated to specific items (Media, CPM Threads, CPM Messages, CPM Session Histories, folders) in the network-based storage can be shown to other Principals.	CPM V1.0
CPM-STOR-024	The CPM Enabler SHALL be able, upon the request of a CPM User who owns a network-based storage, to inform another Principal by notification that he/she has been given/modified/revoked permission to specific items (Media, CPM Threads, CPM Messages, CPM Session Histories, folders) in his/her network-based storage.	CPM V1.0
CPM-STOR-025	The CPM Enabler SHALL be able to record actions being performed on a Principal's network-based storage, and SHALL be able to notify an Authorized Principal about the actions, based on service provider's policies and user preferences. Actions Example: uploaded/modified/removed some specific items (Media, CPM Threads, CPM Messages, CPM Session Histories).	CPM V1.0
CPM-STOR-026	The CPM Enabler SHALL allow an Authorized Principal to access specific items (Media, CPM Threads, CPM Messages, CPM Session Histories) and folders (including the items stored therein) in another user's network-based storage for which the Principal has access permission.	CPM V1.0
CPM-STOR-027	The CPM Enabler SHALL allow an Authorized Principal to upload specific items (Media, CPM Threads, CPM Messages, CPM Session Histories) to folders in a CPM User's network-based storage for which the Principal has write permission.	CPM V1.0
CPM-STOR-028	When a user's network-based storage quota is close to being exceeded or has been exceeded, the CPM Enabler SHALL be able to send an overflow notification to that user, based on service provider policies.	CPM V1.0
CPM-STOR-029	The CPM Enabler SHALL be able to delete items (Media, CPM Threads, CPM Messages, CPM Session Histories) from a user's network-based storage according to service provider's policy (e.g. CPM Messages older than 'x' days).	CPM V1.0
CPM-STOR-030	The CPM Enabler SHALL allow a CPM User to request to be notified about specific item(s) in the user's network-based storage before they are going to be deleted as a result of the service provider's policy.	CPM V1.0
CPM-STOR-031	When a CPM User requested to be notified about specific item(s) in the user's network-based storage before they are going to be deleted, the CPM Enabler SHALL be able to send the corresponding notification to that user, based on service provider's policy.	CPM V1.0
CPM-STOR-032	The CPM Enabler SHALL allow an Authorized Principal to manage (e.g. include in a CPM Message, delete from network-based storage, forward, upload to the network-based storage from the client, download from the network-based storage to the client) CPM Threads belonging to a CPM User either as a whole, or partially, i.e. one or more CPM Messages or CPM Session Histories.	CPM V1.0

Table 7: High-Level Functional Requirements – Network-based Storage Items

6.1.7 Multi-devices Environment

Label	Description	Enabler Release
CPM-MLD-001	The CPM Enabler SHALL be able to deliver either the entire CPM Message or a notification of an available CPM Message to all or a subset of the devices of the CPM User based on message characteristics, Communication Capabilities, user preferences and/or service provider's policy.	CPM V1.0

CPM-MLD-002	The CPM Enabler SHALL be able to deliver continuous Media to all or a subset of the devices with which the CPM User is registered based on Media characteristics, Communication Capabilities, user preferences and/or service provider's policy.	CPM V1.0
CPM-MLD-003	The CPM Enabler SHALL send delivery notification and/or read reports to all or a subset of the devices of the CPM User dependent upon the user preferences and/or service provider's policy.	CPM V1.0
CPM-MLD-004	A CPM User that requested to be notified of the delivery of a CPM Message he/she sent to a recipient having multiple devices SHALL receive exactly one delivery notification after the CPM Message has been delivered to at least one of the devices of the recipient.	CPM V1.0
CPM-MLD-005	A CPM User that requested a read report for a CPM Message he/she sent to a recipient having multiple devices SHALL receive exactly one read report after the CPM Message has been read on at least one of the devices of the recipient.	CPM V1.0
CPM-MLD-006	The CPM Enabler SHALL be able to deliver a CPM Session Invitation to all or a subset of the devices of the CPM User dependent upon the user's preferences, device capabilities and/or service provider's policy.	CPM V1.0
CPM-MLD-007	When the CPM User has accepted the CPM Session Invitation on one of his/her devices, based on CPM User settings and service provider's policy, the outstanding CPM Session Invitations on the other devices SHALL be either: <ul style="list-style-type: none"> • cancelled, or • left pending until acceptance, rejection, or expiration 	CPM V1.0
CPM-MLD-008	When the CPM User has rejected the CPM Session Invitation on one of his/her devices, based on CPM User settings and service provider's policy, the outstanding CPM Session Invitations on the other devices SHALL be either: <ul style="list-style-type: none"> • cancelled, or • left pending until acceptance, rejection, or expiration 	CPM V1.0
CPM-MLD-009	The CPM Enabler SHALL allow the CPM User to switch a CPM Session from one device to another device with minimal interruption of the CPM Session.	CPM V1.0
CPM-MLD-010	When a CPM User requests to switch a CPM Session from one device to another one, the CPM Enabler SHALL allow CPM User to have the CPM Session History or part of it (based upon user's preferences and/or the service provider's policy) displayed on the new device.	CPM V1.0
CPM-MLD-011	The CPM Enabler SHALL allow the CPM User to use multiple devices for a single CPM Conversation.	CPM V1.0
CPM-MLD-012	The CPM Enabler SHALL allow a CPM User to choose which of his/her devices SHALL be used for the added/modified continuous Media within the current CPM Session.	CPM V1.0
CPM-MLD-013	The CPM Enabler SHALL provide CPM User with a mechanism to retrieve, from one of his/her devices, a list of his/her registered devices bound with all of his/her registered CPM Addresses.	CPM V1.0
CPM-MLD-014	For each of his registered CPM Addresses, the CPM Enabler SHALL provide the CPM User with the following information per registered device bound to that CPM Address: <ul style="list-style-type: none"> • the capabilities of the device • the list of current CPM Sessions together with associated Media 	CPM V1.0
CPM-MLD-015	The CPM Enabler SHALL provide the CPM User with a mechanism to define an identifier (i.e. a human readable name) for each of his/her devices.	CPM V1.0

CPM-MLD-016	The CPM Enabler SHALL keep all CPM Threads, a subset of the CPM Threads, or a subset of stored CPM Messages / CPM Session Histories, the whole folder hierarchy (where CPM Messages, CPM Session Histories and/or CPM Threads are stored) or a subset of the folder hierarchy up-to-date on all of the end-user's devices, irrespective of on which device these messages are created (e.g. drafts) and/or received, depending on service provider's policy and/or end-user preferences and filtering-rules.	CPM V1.0
CPM-MLD-017	The CPM Enabler SHALL keep all stored CPM Messages-states (e.g. "read-indications", "reply-indications", etc) up-to-date on all of the end-user's devices, irrespective of on which device changes to these CPM Messages-states occur, depending on service provider's policy and/or end-user preferences and filtering-rules.	CPM V1.0
CPM-MLD-018	The CPM Enabler SHALL allow a CPM User to have a single CPM Address concurrently associated with multiple CPM-enabled devices according to service provider's policy.	CPM V1.0

Table 8: High-Level Functional Requirements – Multi-devices Environment Items

6.1.8 Support of Multiple CPM Addresses

Label	Description	Enabler Release
CPM-MAD-001	The CPM Enabler SHALL allow a CPM User to bind several CPM Addresses to a single CPM-enabled device according to service provider's policy.	CPM V1.0
CPM-MAD-002	The CPM Enabler SHALL allow a CPM User to use multiple CPM Addresses in parallel.	CPM V1.0
CPM-MAD-003	The CPM Enabler SHALL be able to provide each CPM Address with a distinct network-based storage (e.g. storage of Media).	CPM V1.0
CPM-MAD-004	The CPM Enabler SHALL allow a CPM User to have a common set of preference settings for all or a subset of his/her CPM Addresses.	CPM V1.0
CPM-MAD-005	The CPM Enabler SHALL support replying to CPM Messages by using the CPM Address that the original CPM Message was received on.	CPM V1.0
CPM-MAD-006	The CPM Enabler SHALL allow a CPM User to have a common network-based storage (e.g. storage of Media) for all or a subset of his/her CPM Addresses.	CPM V1.0

Table 9: High-Level Functional Requirements – Multiple CPM Addresses Items

6.1.9 Converged Address Book

Label	Description	Enabler Release
CPM-CAB-001	The CPM Enabler SHALL provide a network based address book for the CPM User.	CPM V1.0
CPM-CAB-002	The CAB SHALL provide the CPM User with all available information which may enable him to invoke any kind of CPM Conversation.	CPM V1.0

CPM-CAB-003	The CAB SHALL include contact information such as: <ul style="list-style-type: none"> • Full name • Display name • Addresses (e.g. CPM Address, email address, phone number, SIP address, home address) • Basic personal data (e.g. birth date, description, gender, height) • Extended personal data (e.g. areas of expertise, avatars data, hobbies, interests, photo or video data, title) • Web resources (e.g. homepage url, weblog url, publications url) • Organisational data (e.g. business category, department name, job title, alternative contact or agent) 	CPM V1.0
CPM-CAB-004	The CAB SHALL be able to combine information coming from the personal profile published by the CPM User's contacts with the information that the CPM User customizes about these contacts.	CPM V1.0
CPM-CAB-005	The CAB MAY include as a part of the contact information, the information required for Presence Subscription.	CPM V1.0
CPM-CAB-006	The CPM User MAY be able to select different groups of contacts or single contacts in his/her address book and indicate the values of presence attributes to be exposed to those contacts.	CPM V1.0
CPM-CAB-007	The CPM Enabler SHALL allow the CPM User to add/change/delete contacts information in his address book e.g. display name, picture.	CPM V1.0
CPM-CAB-008	The CPM Enabler SHALL allow the CPM User to manage (e.g. add/change/delete) his own personal contact information and to share it (either completely or partially) with other authorized users.	CPM V1.0
CPM-CAB-009	The CPM Enabler SHALL allow the CPM User to set up individual authorisation rules for sharing his own personal contact information on a per-user or a per CPM Group basis.	CPM V1.0
CPM-CAB-010	The CPM Enabler SHALL allow the CPM User to request to be notified whenever a contact changes his own personal contact information.	CPM V1.0
CPM-CAB-011	The CAB SHALL, according to the user's preferences and/or service provider's policy, be able to either automatically or by request keep up to date all address books (e.g. addition, deletion, modification of contacts or groups of contacts, address book structure) in all CPM enabled registered devices bound with the associated registered CPM Address(es).	CPM V1.0
CPM-CAB-012	The CAB SHALL, according to the user's preferences and/or service provider's policy, be able to either automatically or by request keep all CPM enabled registered devices bound with the associated registered CPM Address(es) up to date with information required for Presence Subscription, User Communication Preferences, and Communication Capabilities.	CPM 1.0
CPM-CAB-013	The CAB SHOULD provide the CPM User with the ability to organize his contacts into different categories of contacts (e.g. family, friends, colleagues).	CPM V1.0
CPM-CAB-014	The CPM User SHALL be able to give selective access and modification rights for his CAB to an Authorized Principal.	CPM V1.0
CPM-CAB-015	The CAB SHALL provide at least one address book per CPM User.	CPM V1.0
CPM-CAB-016	The CAB MAY support one address book per CPM Address of the CPM User.	CPM V1.0

Table 10: High-Level Functional Requirements – Converged Address Book Requirements

6.1.10 Applications

Label	Description	Enabler Release
CPM-VAS-001	<p>The CPM Enabler SHALL allow any CPM Conversation between Applications (including those provided by VASPs) and other Principals regardless of:</p> <ul style="list-style-type: none"> • the content of the CPM Message (text or multimedia) • the desired user experience (e.g. immediate or deferred delivery) • the number of recipients • the messaging technologies supported by end user's device • whether the intended recipient is a CPM User or not 	CPM V1.0
CPM-VAS-002	<p>The CPM Enabler SHALL provide an interface to Applications (including those provided by VASPs) that supports at least the functionalities provided by existing interfaces (e.g. MM7 between third party Applications and MMS Relay/Server, SMPP between third party Applications and SMS-SC).</p>	CPM V1.0
CPM-VAS-003	<p>The CPM Enabler SHALL be able to receive CPM Messages/CPM Session Invitations intended for a VASP from the different non-CPM messaging platforms, in case that the users have sent them from a non CPM-capable device. The CPM Enabler SHALL subsequently forward the CPM Messages/CPM Session Invitations to the intended VASP.</p>	CPM V1.0
CPM-VAS-004	<p>The CPM Enabler SHALL support the originator of a CPM Message or a CPM Session Invitation to indicate, in that CPM Message or CPM Session Invitation, the source VAS Application in the CPM-enabled originating entity (device or VASP).</p>	CPM V1.0
CPM-VAS-005	<p>The CPM Enabler SHALL support the originator of a CPM Message or a CPM Session Invitation to indicate, in that CPM Message or CPM Session Invitation, the target VAS Application in the CPM-enabled receiving entity (device or VASP).</p>	CPM V1.0
CPM-VAS-006	<p>The CPM Enabler SHALL support generating and sending of event notification with relevant information (e.g. user causing the event, type of event, ...) back to the Application so that the Application may take suitable service logic decisions.</p> <p>Examples of event classes:</p> <ul style="list-style-type: none"> • a Participant joining/leaving a communication, including in a hidden mode • the registration/de-registration of a device with a CPM Service • the modification of a session (Media addition, switching to another device, ...) • an access to messages or Media in the network-storage, a change in access rights over Media or storage • content adaptation of a message • attempts of unidentified and/or unauthenticated Principals to use a CPM Service 	CPM V1.0
CPM-VAS-007	<p>The CPM Enabler SHALL allow the event notification to be set and activated</p> <ul style="list-style-type: none"> • on a per user or on a per Application basis • based on time (e.g. for scheduled event) 	CPM V1.0
CPM-VAS-008	<p>The CPM Enabler SHALL allow an Application with appropriate rights to send a CPM Message or initiate a CPM Session on behalf of a CPM User (e.g. for scheduled conferencing or when the recipient(s) become(s) available).</p>	CPM V1.0

CPM-VAS-009	The CPM Enabler SHALL allow an Application with appropriate rights to exercise control over a CPM Conversation including but not limited to starting/stopping a CPM Session (e.g. for time-bound conferencing Applications), listing/searching ongoing CPM Sessions & associated Participants, replaying the recent history of a CPM Conversation (e.g. in case of device switching), adding/removing Participants to a CPM Session (e.g. for a moderated chat room).	CPM V1.0
CPM-VAS-010	The CPM Enabler SHALL allow an Application with appropriate rights to use moderation functions over Media usage (e.g. for a conferencing Application where only the authorized speaker might be allowed to send his video stream to the CPM Session Participants).	CPM V1.0
CPM-VAS-011	The CPM Enabler SHALL allow an Application with appropriate rights to use Media handling functions such as adding/removing Media (continuous) to/from a CPM Session, Media redirection (e.g. indicate that a video shall be sent to a specified end point), Media splitting (audio vs. video, ...)	CPM V1.0
CPM-VAS-012	The CPM Enabler SHALL allow a CPM service provider to enable/disable on a per Application and/or VASP basis (e.g. some Applications might not be allowed to retrieve the list of ongoing CPM Sessions or the list of the Participants to a conversation ...) the CPM Enabler features exposed to Applications.	CPM V1.0
CPM-VAS-013	The CPM Enabler SHALL be able to provide anonymity for the CPM User when communicating with an Application.	CPM V1.0

Table 11: High-Level Functional Requirements – Applications Items

6.1.11 Lawful Interception

NOTE: The capability to intercept CPM telecommunications traffic and related information is always implemented in accordance with national or regional (e.g. European Union) laws or technical regulations applicable to the service provider. Nothing in this specification, including the definitions, is intended to supplant such applicable laws or regulations.

Label	Description	Enabler Release
CPM-LI-001	The CPM Enabler SHALL support capabilities to allow lawful interception.	CPM V1.0
CPM-LI-002	Available and applicable underlying network (e.g., SIP/IP Core) capabilities SHOULD be used to support lawful interception requirements as much as possible (e.g. use 3GPP lawful interception in case of 3GPP IMS and/or other national or regional technical specifications).	CPM V1.0

Table 12: High-Level Functional Requirements – Lawful Interception Items

6.1.12 Interworking

Label	Description	Enabler Release
CPM-IWF-001	The CPM Enabler SHALL support interworking with Non-CPM Communication Services without requiring changes to them.	CPM V1.0
CPM-IWF-002	The CPM Enabler SHALL allow a CPM User to send a CPM Message from a CPM-enabled device to a non-CPM User.	CPM V1.0
CPM-IWF-003	The CPM Enabler SHALL allow a CPM User to receive a message from a non-CPM User.	CPM V1.0
CPM-IWF-004	The CPM Enabler SHALL be able to send messages using an appropriate non-CPM communication technology in case that the intended recipient is not a CPM User or is not available for receiving CPM Messages.	CPM V1.0

CPM-IWF-005	The CPM Enabler SHALL allow a CPM User to attempt to send a continuous Media from a CPM-enabled device to a non-CPM User or to a CPM User who is not available for receiving continuous Media. If the continuous Media cannot be sent, the sender SHALL be notified.	CPM V1.0
CPM-IWF-006	The CPM Enabler SHALL allow a CPM User to receive a continuous Media to a CPM-enabled device from a non-CPM User.	CPM V1.0
CPM-IWF-007	The CPM Enabler SHALL be able to convert a CPM Session Invitation towards the appropriate format for the target messaging service, and accept a response to that converted invitation while performing interworking towards a Non-CPM Communication Service that does support sessions and invitations.	CPM V1.0
CPM-IWF-008	When interworking towards a Non-CPM Communication Service that does not support sessions or invitations, depending on user preferences and service provider policies, the CPM Enabler SHALL be able to: <ul style="list-style-type: none"> • Accept a CPM Session Invitation on behalf of a non-CPM User • Reject the CPM Session Invitation • Convert a CPM Session Invitation towards an inviting message, and accept a response from the non-CPM User to the inviting message 	CPM V1.0
CPM-IWF-009	The CPM Enabler SHALL be able to convey to a CPM User an invitation request from a Non-CPM Communication Service, and convey the corresponding invitation response back to the non-CPM user.	CPM V1.0
CPM-IWF-010	When a CPM User exchanges messages with a non-CPM User, the CPM Enabler SHOULD be able to identify CPM Messages associated with a CPM Conversation so that they can be displayed in a conversational view in the CPM User's device if required by the CPM User's preferences.	CPM V1.0
CPM-IWF-011	The CPM Enabler SHOULD be able to provide the necessary information to Non-CPM Communication Services so that a Non-CPM Communication Service user can view messages in the order they are sent by the CPM User.	CPM V1.0
CPM-IWF-012	The CPM Enabler SHOULD be able to use any information provided and supported by a Non-CPM Communication Service to ensure that a CPM User can view messages in the order they are sent by the non-CPM User.	CPM V1.0
CPM-IWF-013	When provided with presence support, a CPM User MAY be able to subscribe to Presence Information of a user that uses a Non-CPM Communication Service that supports Presence Information exchange.	CPM V1.0
CPM-IWF-014	For a CPM User provided with presence support, it MAY be possible to make available Presence Information of that CPM User towards Non-CPM Communication Service that supports Presence Information exchange.	CPM V1.0
CPM-IWF-015	When provided with presence support, a CPM User MAY be provided with information generated by the CPM Enabler about users of a Non-CPM Communication Service that does not support Presence Information exchange (e.g. indication of "non-CPM Service").	CPM V1.0
CPM-IWF-016	The CPM Enabler SHALL preserve the request of an originator to not disclose its identity while interworking with a Non-CPM Communication Service.	CPM V1.0
CPM-IWF-017	The CPM Enabler SHALL refrain from interworking with a Non-CPM Communication Service when the originator requested to not disclose its identity and the interworking cannot guarantee this.	CPM V1.0
CPM-IWF-018	The CPM Enabler SHOULD preserve privacy indications when interworking.	CPM V1.0
CPM-IWF-019	The CPM Enabler SHOULD preserve priority indications when interworking.	CPM V1.0

Table 13: High-Level Functional Requirements – Interworking Items

6.1.13 Security

Label	Description	Enabler Release
CPM-SEC-001	The CPM Enabler SHALL provide a Principal with at least the same security level as is provided with the existing messaging services (e.g. SMS, MMS, SIMPLE IM, POC, VoIP).	CPM V1.0
CPM-SEC-002	The CPM Enabler SHALL allow a CPM Service to provide CPM Users with Content Screening based on user preferences and service provider policies.	CPM V1.0
CPM-SEC-003	The CPM Enabler SHOULD allow a CPM Service to protect CPM Users against Unwanted Messaging, according to the user's preferences and service provider policies.	CPM V1.0
CPM-SEC-004	The CPM Enabler MAY allow a CPM Service to protect CPM Users against Malware, according to the user's preferences and service provider policies.	CPM V1.0
CPM-SEC-005	Unauthorized Principals SHALL be denied access to the functions of the CPM Enabler.	CPM V1.0
CPM-SEC-006	It SHALL be possible to preserve the integrity and confidentiality of communication between a CPM Client and CPM network based functionality.	CPM V1.0
CPM-SEC-007	The CPM Enabler SHALL NOT enable the circumvention of applicable DRM mechanisms (e.g. when a user gives permission to access Media in his/her network-based storage).	CPM V1.0

Table 14: High-Level Functional Requirements – Security Items

6.1.13.1 Authentication

Label	Description	Enabler Release
CPM-AUC-001	A CPM Enabler SHALL support a Principal to be authenticated by the CPM service provider domain.	CPM V1.0
CPM-AUC-002	The CPM Enabler SHALL support a Principal to authenticate the CPM service provider domain.	CPM V1.0
CPM-AUC-003	The CPM Enabler MAY leverage the authentication capabilities of the underlying IP network to authenticate a Principal.	CPM V1.0
CPM-AUC-004	The CPM Enabler MAY leverage the authentication capabilities of the underlying IP network to allow a Principal to authenticate the service provider domain.	CPM V1.0

Table 15: High-Level Functional Requirements – Authentication Items

6.1.13.2 Authorization

Label	Description	Enabler Release
CPM-AUT-001	The CPM Enabler SHALL verify, if applicable by the service provider's policy, whether a Principal is authorized to perform the action(s) it requested.	CPM V1.0

Table 16: High-Level Functional Requirements – Authorization Items

6.1.13.3 Data Integrity

None.

6.1.13.4 Confidentiality

None.

6.1.14 Charging

Label	Description	Enabler Release
CPM-CHA-001	The CPM Enabler SHALL support the creation of Charging Events needed for different charging models, e.g. charging for individual events, charging for sessions, charging based on service subscriptions, and to facilitate Charging Correlation.	CPM V1.0
CPM-CHA-002	The CPM Enabler SHALL support Online Charging.	CPM V1.0
CPM-CHA-003	The CPM Enabler SHOULD support Offline Charging.	CPM V1.0

Table 17: High-Level Functional Requirements – Charging Items

6.1.15 Administration and Configuration

None.

6.1.16 Usability

Label	Description	Enabler Release
CPM-USA-001	The CPM Enabler SHALL be able to present to the recipient CPM User, the display name of the sender as in the recipient's address book, or a combination of the display name and other information (e.g. company name) from the recipient's address book, instead of the display name included in the originating address information. Note: if the sender has requested not to disclose his identity then this requirement does not apply.	CPM V1.0
CPM-USA-002	The CPM Enabler SHALL allow the CPM User to initiate communication using URI Schemes contained in CPM Messages.	CPM V1.0
CPM-USA-003	The CPM Enabler SHALL allow a CPM User to control (i.e. switch on/off) the notifications he/she wants to receive, according to service provider's policy.	CPM V1.0
CPM-USA-004	The CPM Enabler SHALL ensure that a CPM User does not have to know or select the communication technology that will be used for sending a CPM Message to a non-CPM User.	CPM V1.0
CPM-USA-005	The CPM Enabler SHALL ensure that a CPM User does not have to know or select the communication technology that will be used for sending a continuous Media to a non-CPM User.	CPM V1.0
CPM-USA-006	The CPM Enabler SHALL ensure that a CPM User does not have to know or select the communication technology that will be used for sending a CPM Session Invitation to a non-CPM User.	CPM V1.0
CPM-USA-007	The CPM Enabler SHALL ensure that a CPM User does not have to know the communication technology used by the non-CPM User to send an invitation request.	CPM V1.0

Table 18: High-Level Functional Requirements – Usability Items

6.1.17 Interoperability

Label	Description	Enabler Release
CPM-IOP-001	The CPM Enabler SHALL support CPM Conversations between Principals from different CPM service providers.	CPM V1.0

Table 19: High-Level Functional Requirements – Interoperability Items

6.1.18 Privacy

None.

6.2 Overall System Requirements

Label	Description	Enabler Release
CPM-OSR-001	Recognizing the existence of current standards-based communication services (messaging, telephony, etc), the CPM Enabler SHOULD re-use as appropriate (e.g. through reference) relevant parts of the associated supporting specifications from OMA, 3GPP, 3GPP2, IETF, TISPAN, etc.	CPM V1.0

Table 20: High-Level System 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	9 Aug 2006	n/a	Empty template
OMA-RD-CPM-V1_0	8 Sep 2006	4, 3.2, 3.3, 5, 6	Incorporates inputs to committee: OMA-REQ-CPM-2006-0037R01-INP_RD_introduction OMA-REQ-CPM-2006-0044R06-INP_RD_Definitions OMA-REQ-CPM-2006-0048R01-INP_User_Experience_Comparison OMA-REQ-CPM-2006-0049R01-INP_Converged_IP_Messaging_Use_Case_O2 OMA-REQ-CPM-2006-0026R02-INP_CPM_Multidevices_DynamicSessionModification OMA-REQ-CPM-2006-0035R01-INP_CPM_security_requirements OMA-REQ-CPM-2006-0036R01-INP_CPM_privacy_requirements OMA-REQ-CPM-2006-0001R02-INP_CPM_Use_Cases_A2P_Messaging OMA-REQ-CPM-2006-0062R01-INP_Group_communication
	5 Oct 2006	1, 5, 6	Incorporates inputs to committee: OMA-REQ-CPM-2006-0069R01-CR_Scope_of_CPM OMA-REQ-CPM-2006-0041R03-INP_CPM_Centralized_Storage_Use_Case Incorporates the following CR: OMA-REQ-CPM-2006-0070-CR_UC_Requirements_Refine
	18 Oct 2006	3, 5, 6	Incorporates inputs to committee: OMA-REQ-CPM-2006-0058R01-INP_Cross_Device_Synchronisation_Use_Case OMA-REQ-CPM-2006-0079R02-INP_CPM_Enabler_Message_Initiation OMA-REQ-CPM-2006-0009R05-INP_Seamless_Messaging_Interworking Incorporates the following CR: OMA-REQ-CPM-2006-0090R03-CR_Presence_usage OMA-REQ-CPM-2006-0080-CR_Suggested_Relocation_And_Modification_of_CPM_VAS_003 OMA-REQ-CPM-2006-0100R01-CR_Clarification_VASP_immediate_message OMA-REQ-CPM-2006-0103-CR_clean_up_sections_6_1_5_and_6_1_6 OMA-REQ-CPM-2006-0104-CR_Corrections_to_RD OMA-REQ-CPM-2006-0105R02-CR_RD_wording_harmonization
	6 Nov 2006	5.3.2.1	Incorporates the following CR: OMA-REQ-CPM-2006-0110-CR_Media_mention_in_CPM_RD_VASP_use_case_specific_issues

Document Identifier	Date	Sections	Description
	21 Nov 2006	1, 2, 3, 4, 5, 6	<p>Incorporates the following CR:</p> <ul style="list-style-type: none"> OMA-REQ-CPM-2006-0084R03-CR_Use_Cases_on_Data_Synchronization OMA-REQ-CPM-2006-0087R02-CR_Group_Communication_Public_Chat_Room OMA-REQ-CPM-2006-0088R02-CR_Pre_Defined_Group_with_Streaming_Media OMA-REQ-CPM-2006-0111R02-CR_Media_Definition OMA-REQ-CPM-2006-0113R02-CR_Scope_re_word OMA-REQ-CPM-2006-0115R02-CR_Central_storage_description OMA-REQ-CPM-2006-0117R03-CR_Multi_Device_Use_Cases OMA-REQ-CPM-2006-0122R03-CR_Media_Sharing OMA-REQ-CPM-2006-0124-CR_Interworking_Requirements_Cleanup OMA-REQ-CPM-2006-0127R03-CR_CPM_Messages_linked_as_part_of_a_CPM_Session OMA-REQ-CPM-2006-0129-CR_Synchronization_Requirements_Cleanup OMA-REQ-CPM-2006-0135R01-CR_Search_Management <p>Incorporates inputs to committee:</p> <ul style="list-style-type: none"> OMA-REQ-CPM-2006-0125-INP_Functs_Comparison
	18 Dec 2006	1, 2, 3, 4, 5, 6	<p>Incorporates the following CR:</p> <ul style="list-style-type: none"> OMA-REQ-CPM-2006-0047R04-INP_Multiple_CPM_Addresses_on_Single_Device OMA-REQ-CPM-2006-0056R03-INP_Application_use_case OMA-REQ-CPM-2006-0078R01-CR_CPM_Security_Requirements OMA-REQ-CPM-2006-0119R02-CR_User_preference_on_receiving_and_storing_message OMA-REQ-CPM-2006-0127R03-CR_CPM_Messages_linked_as_part_of_a_CPM_Session OMA-REQ-CPM-2006-0128R05-CR_Invitations OMA-REQ-CPM-2006-0139R02-CR_Conditional_Group_Session_Establishment OMA-REQ-CPM-2006-0150-CR_message_storage_section OMA-REQ-CPM-2006-0151R01-CR_Editorial_Corrections_to_RD OMA-REQ-CPM-2006-0154-CR_Combine_Interworking_Use_Cases OMA-REQ-CPM-2006-0158-CR_editorials_on_network_based_storage OMA-REQ-CPM-2006-0163-CR_Multi_Device_Requirement_Inconsistency_Bug_Fix OMA-REQ-CPM-2006-0164R01-CR_Add_definitions_for_Immediate_Mode_and_Deferred_Mode OMA-REQ-CPM-2006-0165R01-CR_Security_Requirements OMA-REQ-CPM-2006-0166R01-CR_Charging_Requirements OMA-REQ-CPM-2006-0168-CR_Merge_of_VASP_Messaging_Use_Cases. OMA-REQ-CPM-2006-0171R01-CR_CR_Req_Sec_MLD_SEC_PRI OMA-REQ-CPM-2006-0180-CR_Multi_Addresses_additional_requirements OMA-REQ-CPM-2006-0182R01-CR_Separate_interoperability_and_interworking_requirements OMA-REQ-CPM-2006-0187-CR_Move_HLF002_Req
	21 Dec 2006	4, 6	<p>Incorporates the following CR:</p> <ul style="list-style-type: none"> OMA-REQ-CPM-2006-0169R04-INP_Media_Negotiation_and_Adaptation OMA-REQ-CPM-2006-0170R02-CR_Actors_and_Roles OMA-REQ-CPM-2006-0181R01-CR_Multi_addresses_in_parallel
	11 Jan 2007	6.1.2	<p>Incorporates the following CR:</p> <ul style="list-style-type: none"> OMA-REQ-CPM-2006-0188R02-CR_Hidden_mode_participation_to_group_communication
	24 Jan 2007	5, 6	<p>Incorporates the following CR:</p> <ul style="list-style-type: none"> OMA-REQ-CPM-2006-0161R03-CR_Group_Rules_UC_Requirement OMA-REQ-CPM-2006-0193R02-CR_Media_sharing_and_search_extensions

Document Identifier	Date	Sections	Description
	03 Feb 2007	5, 6	Incorporates the following CR: OMA-REQ-CPM-2006-0099R03- CR_Use_Cases_on_Network_Storage_Management.doc OMA-REQ-CPM-2006-0144R05- CR_Interworking_generalization_and_additions.doc OMA-REQ-CPM-2006-0183R02- CR_Clarify_the_Requirement_of_CPM_STOR_024.doc OMA-REQ-CPM-2006-0184R05- INP_Display_Name_Conversation_at_Receiver_CPM_Enabler.doc OMA-REQ-CPM-2007-0001R02-CR_adding_media_to_messages.doc OMA-REQ-CPM-2007-0003R01-5.2-Alternative-Flow.doc OMA-REQ-CPM-2007-0004-CR_5.5.3.doc OMA-REQ-CPM-2007-0005R01-CR-Clarify-5.6.8.doc OMA-REQ-CPM-2007-0014R03- CR_OMA_REQ_2007_0003_CR_Comments_On_Requirement_CPM_HLF_002. doc OMA-REQ-CPM-2007-0032R03-CR_Presence_and_CPM.doc
	07 Feb 2007	1, 2, 3, 4, 5, 6	Incorporates the following CR: OMA-REQ-CPM-2007-0048R03-CR_CPM_Terminology_change OMA-REQ-CPM-2007-0015R03-CR_Remove_Reduplicate_requirements OMA-REQ-CPM-2007-0016R01- CR_Remove_the_Reduplicate_Requirements_of_GRP_and_STOR OMA-REQ-CPM-2007-0018R03-CR_Presence_attributes_with_contact_list OMA-REQ-CPM-2007-0020- CR_Handle_Informal_Review_Comments_4_5_10 OMA-REQ-CPM-2007-0023R01-INP_Changing_Requirement_Proposal OMA-REQ-CPM-2007-0046-CR_Malware_and_unwanted_messaging OMA-REQ-CPM-2007-0041R01-INP_Address_Multiple_Devices OMA-REQ-CPM-2007-0006R02-CR_URI_Schemes OMA-REQ-CPM-2007-0039R01-CR_Add_Missing_Group_Requirement OMA-REQ-CPM-2007-0040R02- CR_Research_Ad-hoc_Group_Communication OMA-REQ-CPM-2007-0024R02-CR_Rewording_of_CPM_STOR_023 OMA-REQ-CPM-2007-0034R02-CR_Deferred_message_definitions OMA-REQ-CPM-2007-0008R03-CR_CPM_Storage_Authorised_Principal OMA-REQ-CPM-2007-0042R03-CR_CPM_STOR_021 OMA-REQ-CPM-2007-0027R01-CR_RD_ConsistencyReview OMA-REQ-CPM-2007-0047R01-CR_Remove_legacy_term OMA-REQ-CPM-2006-0148R03-CR_Use_of_continuous_media OMA-REQ-CPM-2006-0155R03-CR_Converged_address_book OMA-REQ-CPM-2006-0192R03-INP_voicemail_Use_Case OMA-REQ-CPM-2006-0085R06-CR_Use_Cases_on_User_Preferences OMA-REQ-CPM-2006-0197R03-CR_Lawful_Intercept OMA-REQ-CPM-2006-0195R03-INP_Expiry_time_of_deferred_messages OMA-REQ-CPM-2006-0145R03-INP_VASP_Interface_requirements OMA-REQ-CPM-2006-0190R04-CR_CommentsOnRequirements OMA-REQ-CPM-2006-0198R01-CR_DefiningTheCPMenabler OMA-REQ-CPM-2006-0199R02-CR_No_impact_on_Legacy_Intro
	09 Mar 2007	1, 2, 3, 4, 5, 6	Incorporates the following RDRR comments: A003, A004, A005, A006, A007, A008, A009, A017
	20 Mar 2007	1, 2	Incorporates the following RDRR comments: A018, A021, A022, A026, A029, A031, A037, A039, A041, A045

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	30 Mar 2007	1, 2, 3, 4, 5, 6	Incorporates the following CR: OMA-REQ-CPM-2007-0090R01-CR_RD_Editorial_comments OMA-REQ-CPM-2007-0082R01-CR_RD_Missing_Abbreviations OMA-REQ-CPM-2007-0083-CR_Dictionary_reference OMA-REQ-CPM-2007-0087R01-CR_A125_127 OMA-REQ-CPM-2007-0088-CR_Definitions_sorting_A053_A054_A055_A056_A057_A104 OMA-REQ-CPM-2007-0085-Comverse_CPM_RD_Editorial
	13 Apr 2007	3.2, 6	Incorporates the following CR: OMA-REQ-CPM-2007-0095R01-CR_A442_447_A613 OMA-REQ-CPM-2007-0131-CR_CPM_RDRR_CONV_A636_to_A642 OMA-REQ-CPM-2007-0133R01-CR_CPM_RDRR_GRP_A753 OMA-REQ-CPM-2007-0135R01-CR_CPM_RDRR_CPM_AUC_A1184_to1187 OMA-REQ-CPM-2007-0137R01-CR_RDRR_CPM_Definitions_A751
	27 Apr 2007	2, 3, 4, 5, 6, Annex B	Incorporates the following CR: OMA-REQ-CPM-2007-0093R04-CR_Handle_RDRR_A1116 OMA-REQ-CPM-2007-0098-CR_CPM_RDRR_A339bis_Absence_Service_Flow_ OMA-REQ-CPM-2007-0099-CR_Group_Communication_capable_devices_A295 OMA-REQ-CPM-2007-0100-CR_MCA_Abbreviation_A160_A166_A214 OMA-REQ-CPM-2007-0101R01-CR_ImmediateAndDeferredMode_A1246 OMA-REQ-CPM-2007-0106R01-CR_NewReq_Sec_A1183 OMA-REQ-CPM-2007-0107R04-CR_VAS002_PreserveFncts_A1130_A1133 OMA-REQ-CPM-2007-0108R01-CR_VAS001_SinglerProtocol_A1124_A1128 OMA-REQ-CPM-2007-0109R04-CR_MLD010AccessRegDevices_A1051_A1058_Exc1054 OMA-REQ-CPM-2007-0110R04-CR_MLD005_StopNotif_A1040_A1043 OMA-REQ-CPM-2007-0112-CR_Device_identifier_A1054 OMA-REQ-CPM-2007-0113-CR_GRP_007_A728_A733_and_A735_A738 OMA-REQ-CPM-2007-0119-CR_RD_AbsenceSvcQOE_A0341 OMA-REQ-CPM-2007-0121R01-CR_RD_MLD014_A1079toA1081 OMA-REQ-CPM-2007-0125-CR_CPM_STOR_026_Private_Message_A555_to_A560 OMA-REQ-CPM-2007-0132R01-CR_RD_STOR015_A953toA957 OMA-REQ-CPM-2007-0134-CR_RD_MLD011_A1059toA1071 OMA-REQ-CPM-2007-0139R03-CR_RDRR_CPM_Group_Handling_A750_and_752 OMA-REQ-CPM-2007-0140R01-CR_4MediaSupport_A198_A202 OMA-REQ-CPM-2007-0141R02-CR_RDRR_CPM_Conversation_A653_to_654 OMA-REQ-CPM-2007-0148R01-CR_CPM_CONV_018_Requirement_A518_A521 OMA-REQ-CPM-2007-0149-CR_CPM_CONV_024_Requirement_A543_A544_A545 OMA-REQ-CPM-2007-0150R01-CR_CPM_STOR_20_Requirement_A972_A975 OMA-REQ-CPM-2007-0152R02-CR_Wording_section_4_item_6_A204_A205_A206_A207

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	27 Apr 2007	2, 3, 4, 5, 6, Annex B	<p>OMA-REQ-CPM-2007-0153R01- CR_NewReq_supply_histories_to_new_participants_A649 OMA-REQ-CPM-2007-0155R01-CR_Legacy_to_Non_CPM_Messaging_A058 OMA-REQ-CPM-2007-0158R01- CR_A405_408_HLF_010_Reject_CPM_Conversation OMA-REQ-CPM-2007-0159R06-CR_A367_377_URI_schemes_A1201_1202 OMA-REQ-CPM-2007-0160R01- CR_A350_353_HLF_001_General_AND_presence_enabled_CAB OMA-REQ-CPM-2007-0161R01-CR_A228_241_Actors_and_Roles OMA-REQ-CPM-2007-0162-CR_Handle_RDRR_A594 OMA-REQ-CPM-2007-0163R01- CR_A538_541User_pseudonym_in_group_sessions OMA-REQ-CPM-2007-0166R02- CR_A599_601_Dynamic_Session_Modification OMA-REQ-CPM-2007-0167R01-CR_Handle_RDRR_A801_811 OMA-REQ-CPM-2007-0168R01-CR_A607_612_Presence_Information OMA-REQ-CPM-2007-0169R01- CR_PRS_003_Presence_parameters_A773_A778 OMA-REQ-CPM-2007-0171-CR_Handle_RDRR_A1087_1089 OMA-REQ-CPM-2007-0172R01-CR_A856_860_Content_Adaptation OMA-REQ-CPM-2007-0173R01- CR_A1048_1050_Dynamic_Session_Modification_with_Multiple_Devices OMA-REQ-CPM-2007-0174R01- CR_CR_A907_STOR_005_Processing_Media OMA-REQ-CPM-2007-0177R01-CR_Handle_RDRR_A533 OMA-REQ-CPM-2007-0178R01-CR_Handle_RDRR_A336 OMA-REQ-CPM-2007-0182-CR_Network_storage_A980_A983 OMA-REQ-CPM-2007-0183-CR_CAB_001_A1108_1109 OMA-REQ-CPM-2007-0097R02- CR_A490_to_517_A739_to_740_A546_to_554 OMA-REQ-CPM-2007-0094R03-CR_XDM_Ref OMA-REQ-CPM-2007-0192-CR_A812_817_MED_003 OMA-REQ-CPM-2007-0193R01-CR_Session_History_A106_A107_A108 OMA-REQ-CPM-2007-0194R01-CR_CPM_SP_A116_A117_A118 OMA-REQ-CPM-2007-0196R01-CR_CPM_User_A123_A124 OMA-REQ-CPM-2007-0197R01-CR_Participant_Definition</p>
	3 May 2007	4, 5, 6	<p>Incorporates the following CR: OMA-REQ-CPM-2007-0116R03-CR_Figure1_A219_to_A226 OMA-REQ-CPM-2007-0117R01- CR_MED_004_Media_Immediate_Play_A818_A824 OMA-REQ-CPM-2007-0129R02-CR_CONV_043_Ordered_View_A643_A647 OMA-REQ-CPM-2007-0195-CR_CR_A002_A342_A523_A526_A556 OMA-REQ-CPM-2007-0206-CR_GRP_005_A714_A718 OMA-REQ-CPM-2007-0210R01- CR_Introduction_simultaneous_conversations_A172 OMA-REQ-CPM-2007-0211R01-CR_Introduction_multiple_devices_A214 OMA-REQ-CPM-2007-0212-CR_5_2_1_CPM_abbreviation_usage_A246 OMA-REQ-CPM-2007-0213R01-CR_5_4_5_UC_comments_A282_A285 OMA-REQ-CPM-2007-0214-CR_5_10_terminal_vs_device_A332</p>

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	23 May 2007	3, 6	<p>Incorporates the following CR:</p> <ul style="list-style-type: none"> OMA-REQ-CPM-2007-0200R01-CR_Subject_A345 OMA-REQ-CPM-2007-0202R02-CR_Handle_RDRR_comments_A113_A114_CPM_Address_definition OMA-REQ-CPM-2007-0208R01-CR_PRS_004_Presence_appropriate_features_A780_A784 OMA-REQ-CPM-2007-0204R01-CR_RDRR_A354_to_A360_No_changes_to_non_CPM_Messaging_Services OMA-REQ-CPM-2007-0111R04-CR_VAS007_EventClasses_A1146_A1149 OMA-REQ-CPM-2007-0105R03-CR_IOP001_002_A1209 OMA-REQ-CPM-2007-0218-CR_Folder_Hierarchy_A1072_A1078 OMA-REQ-CPM-2007-0092R06-CR_Handle_RDRR_A128_A143_A144_A1195 OMA-REQ-CPM-2007-0199R04-CR_CPM_Enabler_CPM_System_CPM_Service_Terminology OMA-REQ-CPM-2007-0127R05-CR_CONV_035_Parallel_Sessions_A603_A606 OMA-REQ-CPM-2007-0205-CR_RDRR_A483_to_A486_CPM_Group_Sessions OMA-REQ-CPM-2007-0229R02-CR_RD_CAB_A1013_A1016MoveSTOR_034 OMA-REQ-CPM-2007-0165R02-CR_NBS_Conversation_History_Management_A958_A963 OMA-REQ-CPM-2007-0230R01-CR_RD_CAB_RelatedDefinitions_A1101 OMA-REQ-CPM-2007-0220R01-CR_MED_005_A0826__A0827 OMA-REQ-CPM-2007-0221R01-CR_ChangeMbrShip_GRP_012_A0754_A0751 OMA-REQ-CPM-2007-0223-CR_GroupSessInit_CONV030_A0578_A0582 OMA-REQ-CPM-2007-0086R04-CR_CONV_007_and_009_some_other_means_A453_A461_A463_A470_A476_A479 OMA-REQ-CPM-2007-0198R04-CR_A794_800_Media_Support OMA-REQ-CPM-2007-0226R01-CR_PartialRetrieve_CONV_003_A0427_A0430 OMA-REQ-CPM-2007-0114R04-CR_Deferred_Msg_Delivery_A423_426_and_432_441 OMA-REQ-CPM-2007-0203R02-CR_Handle_RDRR_comment_A920_to_A936_Download_from_Network_based_Storage
	1 June 2007	5, 6	<p>Incorporates the following CR:</p> <ul style="list-style-type: none"> OMA-REQ-CPM-2007-0215R02-CR_STOR_004_A902_A906 OMA-REQ-CPM-2007-0224R02-CR_InitGrpSess_CONV_029_A0573_A0575 OMA-REQ-CPM-2007-0252-CR_Multiple_Devices_Single_Session_A1047 OMA-REQ-CPM-2007-0244R01-CR_merge_VASP_use_cases_RDRR_242_273 OMA-REQ-CPM-2007-0240R01-CR_Multi_media_Communication__Use_of_PoC_Term__A287_A287bis_ OMA-REQ-CPM-2007-0233R02-CR_CR_Mutual_Auth_A1189
	11 June 2007	4, 6	<p>Incorporates the following CR:</p> <ul style="list-style-type: none"> OMA-REQ-CPM-2007-0255-CR_4_2nd_ConvHandling_A183_A191.doc OMA-REQ-CPM-2007-0190R03-CR_Handle_RDRR_comment_A349_A1034_to_A1036.doc OMA-REQ-CPM-2007-0278R01-CR_RDRR_A1037_A1039_Multi_Device_Session_Invitations.doc

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	18 June 2007	2, 3, 4, 5, 6	Incorporates the following CR: OMA-REQ-CPM-2007-0170R04-CR_A708_713_Search_pre_defined_groups OMA-REQ-CPM-2007-0188R02-CR_Handle_RDRR_comments_A394_A396 OMA-REQ-CPM-2007-0207R02- CR_RDRR_A1171_to_A1173_A1176_to_A1182_Security_Requirements OMA-REQ-CPM-2007-0216R02- CR_Content_Adaptation_A828_A837_and_A874_A878 OMA-REQ-CPM-2007-0222R03-CR_FloorCntrl_GRP009_A0741_A0748 OMA-REQ-CPM-2007-0232R02-CR_RD_CAB_A1104_MoveMAD OMA-REQ-CPM-2007-0236R02-CR_RD_STOR_036_A1020_A1023 OMA-REQ-CPM-2007-0237R03- CR_RD_STOR_001_Mov2CAB_A883_A889ExceptA886 OMA-REQ-CPM-2007-0238R02- CR_CPM_Multi_device_and_Dynamic_Session_Modification_A263_A265bis OMA-REQ-CPM-2007-0242R03-CR_Network_storage_A984_A996 OMA-REQ-CPM-2007-0246R01-CR_valuable_bandwidth_RDRR_397 OMA-REQ-CPM-2007-0247R02- CR_concept_session_invite_validity_RDRR_464 OMA-REQ-CPM-2007-0248R01-CR_Bullying_Spying_RDRR_561 OMA-REQ-CPM-2007-0249R01-CR_self_allocated_pseudonym_RDRR_686 OMA-REQ-CPM-2007-0250R01-CR_GRP_010_011_012_MAY_RDRR_749 OMA-REQ-CPM-2007-0251R02-CR_third_party_pseudonyms_RDRR_1239 OMA-REQ-CPM-2007-0257R01-CR_CONV033DynamicChangeCM_A596 OMA-REQ-CPM-2007-0258R01- CR_CONV006ModerateGrpSessions_A448_A452 OMA-REQ-CPM-2007-0259R01-CR_HLF12SendMsgOrInitSess_A414_A416 OMA-REQ-CPM-2007-0268R01-CR_PRS_001_Presence_A765_A769 OMA-REQ-CPM-2007-0273R01-CR_MED_011_A865_to_A873 OMA-REQ-CPM-2007-0274R01-CR_A616_to_A625_threaded_view OMA-REQ-CPM-2007-0276R01- CR_A131_A132_Deferred_Message_definition OMA-REQ-CPM-2007-0279R02- CR_RDRR_A1027_to_A1033_A1084_Multi_Device_Notifications OMA-REQ-CPM-2007-0280R02- CR_RDRR_A680_A685_Group_Management_Requirements OMA-REQ-CPM-2007-0282R05- CR_VAS_006_indicationoftarget_A1139toA1141 OMA-REQ-CPM-2007-0283R04- CR_VAS_005_indicationofsource_A1137_A1138 OMA-REQ-CPM-2007-0289R01- CR_RDRR_A942_to_A952_Upload_to_Network_based_Storage OMA-REQ-CPM-2007-0290R01-CR_CR_HLF_003_A361_A366 OMA-REQ-CPM-2007-0292R01-CR_CR_GRP_003_A700...A707 OMA-REQ-CPM-2007-0293R01-CR_CR_GRP_006_A719...A727 OMA-REQ-CPM-2007-0294R01-CR_CR_Sect_6.1.4_A763 OMA-REQ-CPM-2007-0295R01-CR_CR_Sect_6.1.6_A880...A883 OMA-REQ-CPM-2007-0296R01-CR_CR_STOR_002_A892...A896 OMA-REQ-CPM-2007-0302R02- CR_RDRR_A074_to_A080bis_Non_CPM_Messaging_Service_Definition OMA-REQ-CPM-2007-0303R01- CR_RDRR_A321_to_A328_Interworking_Use_Case OMA-REQ-CPM-2007-0315-CR_5_5_3_group_communication_subscription OMA-REQ-CPM-2007-0316-CR_Presence_introduction_A194 OMA-REQ-CPM-2007-0317-CR_Group_communication_A275_to_A279 OMA-REQ-CPM-2007-0318R01-CR_LI_mechanisms OMA-REQ-CPM-2007-0319R02-CR_CPM_Session_Invitation_definition OMA-REQ-CPM-2007-0322-CR_preview_A937_to_A941 OMA-REQ-CPM-2007-0323R01-CR_Network_storage_A997_A1009

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	22 June 2007	2, 3	Incorporates the following CR: OMA-REQ-CPM-2007-0263R01- CR_CPM_Conversation_definition_A091_A094 OMA-REQ-CPM-2007-0335R01-CR_Update_RD_to_latest_OMA_Dictionary OMA-REQ-CPM-2007-0338- CR_Usage_of_Participant_definition_in_Conversation_definition
	29 June 2007	3, 6	Incorporates the following CR: OMA-REQ-CPM-2007-0286R02- CR_RDRR_A583_to_A593_CPM_CONV_031 OMA-REQ-CPM-2007-0309-CR_MED-010_A862_to_A864
	09 July 2007	3, 4, 5, 6	Incorporates the following CR: OMA-REQ-CPM-2007-0144R02- CR_CPM_Enabler_Definition_wrt_Inter_working_A063_A066 OMA-REQ-CPM-2007-0260R02-CR_NewHLFPerformance_A418 OMA-REQ-CPM-2007-0269R01-CR_STOR-007-008_A910-A919 OMA-REQ-CPM-2007-0320R04- CR_StorageOverflow_STOR035_A1017_A1019 OMA-REQ-CPM-2007-0336R01-CR_A1235 OMA-REQ-CPM-2007-0340-CR_Storage_synchronization_A210 OMA-REQ-CPM-2007-0343-CR_Multi_Device_UC_A249 OMA-REQ-CPM-2007-0344R01- CR_CAB_002_CAB_003_Information_View_Rewording_A1112_A1115 OMA-REQ-CPM-2007-0347R01-CR_A968_to_A971_Download_CPM_Thread Changed to the 2007 template

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	31 July 2007	1, 2, 3, 4, 5, 6	<p>Incorporates the following CR:</p> <p>OMA-REQ-CPM-2007-0103R05-CR_NewPrivacyReq_A1241_1242 OMA-REQ-CPM-2007-0143R04-CR_32PrefCommModes_RDRR_A134_A142 OMA-REQ-CPM-2007-0191R01-CR_CR_A522_Joining_Group_Sessions OMA-REQ-CPM-2007-0219R02-CR_STOR021_STOR022_A0976_0979 OMA-REQ-CPM-2007-0241R03-CR_CONV_041_Delivery_Mechanism_A626_A635 OMA-REQ-CPM-2007-0270R04-CR_CAB_005_A1117_A1120 OMA-REQ-CPM-2007-0299R04-CR_Discrete_media_transfer OMA-REQ-CPM-2007-0307R02-CR_VAS_005_A1137_A1138 OMA-REQ-CPM-2007-0310R01-CR_VAS_requirements_A1129_A1158_A1160_A1162_A1164_A1166_A1167 OMA-REQ-CPM-2007-0314R01-CR_CPM_SP_domain_A119_A122 OMA-REQ-CPM-2007-0326R01-CR_A652_CPM_Conversation_Notifications OMA-REQ-CPM-2007-0327R03-CR_A770_A771_A772_Presence_Requirement_Modification OMA-REQ-CPM-2007-0328R02-CR_Content_Adaptation_Modification OMA-REQ-CPM-2007-0329R01-CR_Network_Access_Type_terminology_clarification OMA-REQ-CPM-2007-0331-CR_VAS_Session_Initiation OMA-REQ-CPM-2007-0350R01-CR_Media_requirements_applicability_to_CPM_Messages_vs_CPM_Conversations_A791 OMA-REQ-CPM-2007-0352R01-CR_Clarify_USA_001_A1196_A1200 OMA-REQ-CPM-2007-0354R03-CR_Scope_and_Introduction_A033 OMA-REQ-CPM-2007-0356R02-CR_CPM_RDRR_DEF_A145 OMA-REQ-CPM-2007-0361R01-CR_Handle_RDRR_A785_to_A789 OMA-REQ-CPM-2007-0362R01-CR_Handle_RDRR_A431 OMA-REQ-CPM-2007-0363R01-CR_CPM_Service_Definition_A67_A73 OMA-REQ-CPM-2007-0364-CR_Combining_GRP001_and_GRP012 OMA-REQ-CPM-2007-0366R01-CR_Add_Radio_Efficiency_to_Introduction OMA-REQ-CPM-2007-0368R01-CR_A378_A393 OMA-REQ-CPM-2007-0372R01-CR_CR_VAS_004_A1135_A1136 OMA-REQ-CPM-2007-0373R01-CR_MAD_004_A1095_A1096 OMA-REQ-CPM-2007-0374R01-CR_STOR_006_A908_A909 OMA-REQ-CPM-2007-0375R01-CR_CPM_Thread_Definition_for_A095toA103 OMA-REQ-CPM-2007-0376R01-CR_RD_STOR_033_A1010_A1012</p> <p>Incorporates editorial changes from the following RDRR comments: A211, A250, A272, A278, A318, A879</p>
	16 Aug 2007	3, 4, 5	<p>Incorporates the following CR:</p> <p>OMA-REQ-CPM-2007-0382R01-CR_529DynCPMsessMod_A267A268 OMA-REQ-CPM-2007-0386R01-CR_Media_types_A174 OMA-REQ-CPM-2007-0387-CR_5_2_9_Available_Media_A266 OMA-REQ-CPM-2007-0388-CR_5_2_11_Dynamic_Session_Modification_OQoE_A271 OMA-REQ-CPM-2007-0389-CR_5_5_2_Wider_set_of_control_A292 OMA-REQ-CPM-2007-0391R01_A331</p> <p>Some editorial changes (RDRR comment A133, reordering of definitions in alphabetical order)</p>

Document Identifier	Date	Sections	Description
	28 Aug 2007	1, 2, 3, 4, 5, 6	Incorporates the following CR: OMA-REQ-CPM-2007-0128R02-CR_Media_terminology_A129_A130 OMA-REQ-CPM-2007-0189R03-CR_Handle_RDRR_comment_A325_A1237 OMA-REQ-CPM-2007-0262R03-CR_CPM_Message_and_Continuous_Media_definitions_A081_A090 OMA-REQ-CPM-2007-0305R03-CR_RDRR_A1210_to_A1233_Interworking_Requirements OMA-REQ-CPM-2007-0333R05-CR_additional_CAB_requirements OMA-REQ-CPM-2007-0345R01-CR_Provision_Registration_Binding_Association_A247 OMA-REQ-CPM-2007-0353R02-CR_Media_vs_device_capabilities_A792 OMA-REQ-CPM-2007-0380R01-CR_InterMediaDependencies_MED008_A0846_A0855_Was0320 OMA-REQ-CPM-2007-0390R02-CR_Expiry_of_Deferred_Messages_A655_A678 OMA-REQ-CPM-2007-0395-CR_5_6_7_Messages_storage_management_A314_A316_A317 OMA-REQ-CPM-2007-0396-CR_Proposal_for_comment_A825 OMA-REQ-CPM-2007-0397R01-CR_Proposal_for_comment_A291 OMA-REQ-CPM-2007-0400-CR_A213_A215_A217 OMA-REQ-CPM-2007-0401R01-CR_RDRR_A1138_Privacy_Reqirent_PRI_001 OMA-REQ-CPM-2007-0402R01-CR_Adding_references_A417 OMA-REQ-CPM-2007-0404-CR_RDRR_Commnet_A1190 OMA-REQ-CPM-2007-0405R02-CR_Proposal_for_comments_A409_to_413 OMA-REQ-CPM-2007-0406R02-CR_comments_525_527_528_529_530_on_pseudonyms OMA-REQ-CPM-2007-0407R03-CR_RD_Access_Log_for_Network_based_Storage OMA-REQ-CPM-2007-0415-CR_Deletion_of_GRP_003 OMA-REQ-CPM-2007-0416R01-CR_Allign_Definitions_A146_A147 OMA-REQ-CPM-2007-0417R03-CR_RD_Communication_preference_clarifications Some editorial changes (RDRR comment A149) Labels of requirements renumbered

Document Identifier	Date	Sections	Description
	23 Sep 2007	1, 3, 4, 5, 6	Incorporates the following CR: OMA-REQ-CPM-2007-0418R03-CR_RD_Editorial_Comments OMA-REQ-CPM-2007-0419R01-CR_RD_Additional_Abbreviations OMA-REQ-CPM-2007-0420R02-CR_Inconsistencies_in_CPM_RD OMA-REQ-CPM-2007-0421R01-CR_Comments_on_6.1.1 OMA-REQ-CPM-2007-0422R01-CR_Comments_on_6.1.3 OMA-REQ-CPM-2007-0423R01-CR_Comments_on_6.1.4 OMA-REQ-CPM-2007-0425R01-CR_Comments_on_6.1.6 OMA-REQ-CPM-2007-0426-CR_Comments_on_6.1.7 OMA-REQ-CPM-2007-0427-CR_Comments_on_6.1.13 OMA-REQ-CPM-2007-0430R01-CR_IWF_015 OMA-REQ-CPM-2007-0431-CR_Editorial_Comments_on_Requirements OMA-REQ-CPM-2007-0435-CR_CPM_Group_Session OMA-REQ-CPM-2007-0436R01-CR_CPM_Converged_Address_Book_Definition OMA-REQ-CPM-2007-0438R02-CR_Communication_Capabilities_and_User_Communication_Preferences OMA-REQ-CPM-2007-0439R01-CR_CPM_Editorial_Change OMA-REQ-CPM-2007-0441R01-CR_Cleaning_CAB_Requirements OMA-REQ-CPM-2007-0442R01-CR_Address_Book_naming_correction OMA-REQ-CPM-2007-0443R01-CR_Cleaning_STOR_024 OMA-REQ-CPM-2007-0444-CR_Missing_sections_from_RD_template OMA-REQ-CPM-2007-0445R02-CR_CPM_Predefined_Group_Inconsistencies OMA-REQ-CPM-2007-0446R01-CR_Correcting_CPM_STOR_32 OMA-REQ-CPM-2007-0447R01-CR_Editorial_Changes_Sections_1_to_4 OMA-REQ-CPM-2007-0448R01-CR_Editorial_Changes_Section_5 OMA-REQ-CPM-2007-0449R01-CR_Changes_for_consistency_purposes OMA-REQ-CPM-2007-0450-CR_Editorial_Changes_Section_6.1.1
	27 Sep 2007	1, 2, 3, 4, 5, 6	Incorporates the following CR: OMA-REQ-CPM-2007-0418R03-CR_RD_Editorial_Comments (Figure 2) Editorial clean-up
Candidate Versions OMA-RD-CPM-V1_0	06 Nov 2007	All	Status changed to Candidate by TP TP Ref# OMA-TP-2007-0438R01- INP_CPM_V1.0_RD_for_Candidate_Approval

Appendix B. Functional Comparison of CPM Re-used Enablers

(Informative)

This section provides a high-level functional analysis for re-use of functional concepts provided in re-usable Enablers for CPM.

Functions	CPM goals	SIMPLE IM	PoC
User Addressing	multiple addresses on same device	n/a	planned for V2.1
	multiple addresses on different device	n/a	planned for V2.1
Multi-device environment	multiple devices with same address	n/a	planned for V2.1
	multiple devices with different addresses	n/a	planned for V2.1
Conversation Handling:	Flexible presence handling	server and clients as presentity and watcher; server on behalf of clients	server and clients as presentity and watcher; server on behalf of clients
	1-1, 1-N, 1-Application communication		1-1, 1-N, 1-N-1 planned for V2.1: VAS
	immediate and deferred mode	deferred mode: temporary storage in PF of IM server; immediate mode: if user is online.	immediate mode and support of PoC Box functionality; IPA - alert to indicate wish for communication; planned for V2.1: invitation reservation
Media support:	any Media can be primary	text is primary Media	voice is primary Media
	discrete Media	yes	discrete Media - in full-duplex mode, decoupled from Media control entity; re-use of IM (pager mode); Example: send image during PoC session
	continuous Media	?	continuous Media - in half-duplex mode, coupled to Media control entity; Example: video sharing during PoC session
	any Media at conversation invocation	text + discrete Media	any
	modify during conversation	text + discrete Media	modify any Media (except voice)
Groups and Group Management:	Ad-hoc	nested lists, nested groups	Ad-hoc
	pre-defined		pre-arranged, chat
			Dispatcher (1-N-1)
			Multiple group calls
			Group advertisement for pre-defined groups
	re-use of XDM Enabler	use shared XDM, IM XDM	use shared XDM, PoC XDM

	[OMA XDM]		
Interworking with Non-CPM Communication Services / other systems		see reference release.	PoC interworking service: interworking with PTT networks remote PoC clients access
Network-based storage		controlled by user's settings	not in general for all conversations; intended for missed and explicit forwarded calls.
		handled by PF of IM server with conversation history function stored in XDMS for non-peer-to-peer sessions only.	UE-based PoC box; NW-based PoC Box
Application support		??	planned for V2.1

Table 21: Functional comparison of SIMPLE IM Enabler and PoC Enabler with CPM