Push to Communicate for Public Safety Requirements

Candidate Version 1.0 – 20 Feb 2015

Open Mobile Alliance

OMA-RD-PCPS-V1_0-20150220-C

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1. Scope (Informative)

This document defines the requirements for the Push to Communicate for markets including Public Safety (PCPS) Enabler V1.0. This document captures the overall service description, primarily from the service subscriber's and user's points of view, but its scope does not include the details of the human interface itself. The information contained in this RD is applicable to network operators, service providers and terminal and infrastructure manufacturers.

This RD contains the core requirements for the PCPS V1.0 enabler as specified by OMA. By means of this enabler, together with other OMA service enablers, a service provider SHALL be able to provide a complete service.

The term PCPS in this document refers to the Push to Communicate for Public Safety enabler offered via an OMA compatible environment.

The intention is to include the requirements created for Push-to-talk over Cellular (PoC) as developed in OMA [OMA PoC RD 1.0], [OMA PoC RD 2.0] and [OMA PoC RD 2.1] with updates as mandated by the PCPS Phase 1 Work Items Document (WID). As stated in the WID, the mandated updates are those necessary for PoC v2.1 to align with 3GPP Release 12 LTE and relevant key features based upon completed 3GPP requirements up through Release 12, excluding ProSE and GCSE.

2. References

2.1 Normative References

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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-many PoC Session	A PoC Session with many Participants and in which all Participants can communicate with each other.
1-many-1 PoC Session	A PoC Session established by a PoC User to a Pre-arranged PoC Group, in which one Participant is a Distinguished Participant and other Participants are Ordinary Participants.
1-to-1 PoC Session	This is sometimes abbreviated as 1-1. A feature enabling a PoC User to establish a PoC Session with another PoC User.
Access Control	PoC User specified rules that restrict the set of other PoC Users that may establish PoC Sessions to the PoC User.
Ad-hoc PoC Group	A temporary PoC Group whose initial set of Participants is selected by the PoC User during the PoC Session set-up.
Ad-hoc PoC Group Session	A PoC Group Session involving an Ad-hoc PoC Group.
Answer Mode	A PoC Client mode of operation for the terminating PoC Session invitation handling.
Answer Mode Indication	A PoC Service Setting indicating the current Answer Mode of the PoC Client.
Automatic Answer Mode	Automatic Answer Mode is a PoC Client mode of operation in which the PoC Client accepts a PoC Session establishment request without manual intervention from the user; Media is immediately played when received.
BER	Is the measured raw bit error rate for voice on the radio link.
Charging Data Record (CDR)	Record generated by a network element for the purpose of billing a subscriber for the provided service. It includes fields identifying the user, the session and the network elements as well as information on the network resources and services used to support a subscriber session. In the traditional circuit domain, CDR has been used to denote "Call Detail Record", which is subsumed by "Charging Data Record" as a generic term applicable to both circuit and packet switched networks.
Chat PoC Group	A persistent (pre-configured) PoC Group in which each PoC User individually joins the PoC Session, i.e., the establishment of a PoC Session to a Chat PoC Group does not result in other PoC Users being invited.
Chat PoC Group Session	A PoC Group Session established to a Chat PoC Group.
Condition Re-evaluation	Repeated evaluation of conditions of PoC Users against the rules that define a Dynamic PoC Group. According to the evaluation results PoC Users are invited to or removed from a PoC Session involving the Dynamic PoC Group
Continuous Media	Media with an inherent notion of time (e.g., speech, audio, and video).
Corporate PoC System	A system compliant with the OMA PoC specifications which is running in an Enterprise/Corporate Environment.
Crisis Event	An unplanned event having potentially significant impact on the safety or well-being of the community (local, regional or national). Examples of a Crisis Event include natural or man-made disasters.
Crisis Event Handling Entity	A functional entity in the PoC Network to handle PoC Sessions by authorized users initiated in case of a Crisis Event.
Crisis Handling Request	A request where a PoC User needs the immediate attention of the invited PoC Users.

Discrete Media	Media that itself does not contain an element of time (e.g., images, text).
Dynamic PoC Group	A Pre-arranged, restricted Chat or Ad-hoc PoC Group whose Participants are restricted based on the evaluation of a set of rules.
External Media Content Server	A non PoC entity that conveys media content to Participants of a PoC Session.
External Media Content Server Retrieval	A PoC feature enabling PoC User to request the PoC Service Infrastructure to convey a media content from an External Media Content Server to Participants of a PoC Session.
External P2T Network	Private or public circuit switched or packet switched network that provide Push To Talk services similar to PoC Services.
Floor Control	Mechanism for the arbitration of the sequence of PoC Participants to speak. Informational Note: Floor Control is synonymous with "Talk Burst Control"
Full Duplex	Media flow in both directions at the same time. Hence a user can speak and hear at the same time.
Group Advertisement	A Group Advertisement is a feature that provides the capability to inform other PoC Users of the existence of a PoC Group.
Group List	A list of members in a Pre-arranged or restricted Chat PoC Group. Each member is identified by a SIP URI or a TEL URI.
Half Duplex	Media flow in both directions between the network and the terminal, but only in one direction at a time. Media cannot flow in both directions at the same time. Hence a user cannot speak and hear at the same time.
Half Duplex Voice Chat	A voice chat system allows peer-to-peer or conference based voice interactions (Half Duplex) between the voice chat clients. It is assumed to be implemented via SIP / RTP over the internet or an intranet domain. A registrar and SIP proxy is available to appropriately route SIP messages. The voice chat clients do not provide services like group management or Floor Control.
Hierarchical PoC Group	A PoC Group with internal structure that is made up different levels.
Home PoC Network	The Home PoC Network is a PoC Network operated by the user's PoC Service Provider. The Home PoC Network is the same as the Home Network defined in IMS and MMD specifications.
Home PoC Server	The Home PoC Server is the PoC Server owned by the PoC Service Provider that provides PoC Service to the PoC User.
Incoming Condition Based PoC Session Barring	A feature to block a particular incoming PoC Session request based on conditions defined for incoming PoC Sessions.
Incoming Instant Personal Alert Barring	Incoming Instant Personal Alert Barring is a PoC Service Setting for the PoC Client that conveys the PoC User's desire for the PoC Service to block all incoming Instant Personal Alerts.
Incoming Media Content Barring	A feature to block particular Media Type(s) of media content included in incoming PoC Session and Group Advertisement requests.
Incoming Media Stream Barring	A feature to block particular Media Type(s) of media streams in incoming PoC Session requests and during ongoing PoC Sessions at terminating PoC Client.
Instant Personal Alert	A feature in which a PoC User sends a message to a PoC User requesting a 1-1 PoC Session.
Inviting PoC Client	An Inviting PoC Client is a PoC Client that invites other PoC User(s) to a PoC Session.
Limited Participant Information	A subset of Participant Information.
Man-machine PoC Session	A PoC Session between a PoC client interfacing with a human end user and another PoC client interacting with a non-human end point. Examples of a non-human end point include: a software-controlled camera, a recorded announcement machine, or an application embedded in some other types of appliance.
Manual Answer Mode	Manual Answer Mode is a PoC Client mode of operation in which the PoC Client accepts a PoC Session establishment request only after manual intervention from the PoC User.
Manual Answer Override	A PoC Service feature in which the Inviting PoC Client can use to override the Manual Answer Mode of the other PoC User(s) he is inviting to a PoC Session.

Media	Forms of information that are exchanged between Participants. Media may come in different forms, which are referred to as Media Types.
Media Burst	Flow of Media from a PoC Client, that has the permission to send Media to the receiving PoC Client(s).
Media Burst Control	A control mechanism that arbitrates requests from the PoC Clients, for the right to send Media and Multimedia.
Media Burst Request Permission Level	A level of permission, which can be used to limit the PoC Clients to request Media Burst.
Media Parameters	Information exchanged between the PoC Server and the PoC Client that specify the characteristics of the Media for a PoC Session being established or being modified.
Media Type	Media Types are either real-time or non-real-time, like: - audio (e.g., speech, music) - video - still image - text (formatted and non-formatted) - file
Multimedia	Multimedia is the simultaneous existence of multiple Media Types like - audivisual - video plus subtitles Multimedia from a single source that involves real-time Media Types are assumed to be synchronized.
Outgoing Condition Based PoC Session Barring	A feature to block a particular outgoing PoC Session request based on conditions defined for outgoing PoC Sessions.
Participant	A PoC User in a PoC Session.
Participant Information	Information about the PoC Session and its Participants.
PCPS Service Enabler	The functionality as defined in the OMA Push-to-Communicate for Public Safety (PCPS) V1.0 Requirements, Architecture and Technical Specification Documents.
PoC Address	A PoC Address identifies a PoC User. The PoC Address can be used by one PoC User to request communication with other PoC Users.
PoC Administrator	An entity that creates and maintains relevant aspects of PoC Service for a specific PoC Subscriber or group of PoC Subscribers. The PoC Service Provider is the default PoC Administrator. PoC administrative rights may be assigned to a representative of a group of PoC Subscribers (e.g., IT department of a corporation, or a VAS provider) for the purpose of administering a PoC Service within that group of PoC Subscribers.
PoC Box	The functionality to store Media Bursts and related information (e.g., date & time, Sender Identity, Participant Information) on behalf of a PoC User.
PoC call	This is a term more suited for ordinary use which describes the PoC service experience from an end user perspective. This term is only used in the Informative chapters in this document.
PoC Client	A PoC Client is a PoC functional entity that resides on the User Equipment that supports the PoC Service.
PoC Dispatcher	PoC Dispatcher is a Participant in a 1-many-1 PoC Session that sends Media to all PoC Fleet Members and that receives Media from any PoC Fleet Member.
PoC External Entity	An entity connected to a PoC system, which provides supporting functionalities for Participants. Authorised Participants are able to control the PoC External Entities to realize the desired functionalities.
PoC Fleet Member	A Participant in a 1-many-1 PoC Session that is only able to send Media to the PoC Dispatcher, and that likewise is only able to receive Media from the PoC Dispatcher.
PoC Group	A PoC Group is a predefined set of PoC Users together with its attributes. A PoC Group is identified by a SIP URI.

PoC Group Administrator	A person(s) or entity who has the authority to define, delete or modify PoC Group Memberships (i.e., administrative rights for PoC Group Membership management are exercised in an "off-line" fashion). The PoC Service Provider has PoC Group administrative rights by default. PoC Group administrative rights may be assigned by the PoC Service Provider to a PoC Subscriber or his representative (e.g., IT department in a corporation) as part of the service provisioning, or temporarily assigned by the PoC Session Owner to a Participant in a PoC Group Session. The PoC Group Administrator may be a Participant in all, some or none of the PoC Group Sessions. PoC Group Administrator is a special case of PoC Administrator.
PoC Group Identity	The PoC Group Identity is a SIP URI of the Pre-arranged PoC Group or Chat PoC Group.
PoC Group Member	PoC User who has been added to a PoC group through an administrative action.
PoC Group Session	A PoC Session involving a Pre-arranged PoC Group, Ad-hoc PoC Group or Chat PoC Group.
PoC Host	A PoC Participant who has authority to initiate and administrate an active group session (i.e. group administrative rights in a PoC session are exercised in an "on-line" fashion). The service provider has PoC Host administrative rights by default, subject to applicable privacy rules.
PoC Network	Network comprising of a SIP/IP Core and PoC Server(s), which provide PoC capabilities to the associated PoC capable User Equipments which are compliant with OMA PoC Service Enabler specifications.
PoC Participant	A PoC User who is participating in a PoC session.
PoC Remote Access	A method of providing a compliant PoC User access to a SIP/IP Core and PoC Network via an potentially non-SIP/IP based network
PoC Server	The PoC Server implements the 3GPP IMS and 3GPP2 MMD application level network functionality for the PoC Service.
PoC Service	The user perception of service functionality provided by the PoC Service Enabler.
PoC Service Enabler	The functionality as defined in the PoC V1.0 and V2.1 Requirements, Architecture and Technical Specification Documents.
PoC Service Entity	Realize capabilities to support the PoC Service Enabler.
PoC Service Infrastructure	The PoC Service Infrastructure is comprised of all PoC Networks and their system elements. PoC Networks are assumed to be interconnected to allow communication and data transfer among PoC Users.
PoC Service Provider	A PoC Service Provider provides PoC Service – on its own or in conjunction with other Value Added Services – to his PoC Subscribers.
PoC Service Setting	The PoC Service Settings are, e.g., Answer Mode Indication, Incoming PoC Session Barring, Incoming Instant Personal Alert Barring, and Simultaneous PoC Sessions Support.
PoC Session	A PoC Session is a SIP Session established by the procedures of this specification. This specification supports the following types of PoC Sessions: 1-1 PoC, Ad-hoc PoC Group, Pre-arranged PoC Group, and Chat PoC Group Session.
PoC Session Control Data	Information about PoC Session Data e.g., time & date, PoC Session initiator, etc.
PoC Session Data	Media Bursts and Media Burst Control information exchanged during a PoC Session e.g., video frames, an image or Talk Burst.
PoC Session Owner	The PoC Session Owner in the case of 1-1 PoC Session and Ad-hoc PoC Group Session is the initiator of the PoC Session. In the case of a Chat PoC Group and a Pre-arranged PoC Group Session, the PoC Session Owner is the creator of the PoC Group.
PoC Session Priority	The PoC Session Priority is determined based on the Service Provider Policy and the QoE profile associated to the PoC Session. It controls how the PoC Session is treated under competing situations with other PoC Sessions and may result in a preferred treatment for those PoC Sessions with a higher PoC Session Priority. The definition of different levels to be applied for this feature is a decision that belongs to the PoC Service Provider.
PoC Session Search	A method for providing identities of ongoing PoC Sessions.
PoC Subscriber	A PoC Subscriber is one whose service subscription includes the PoC Service.
PoC User	A PoC User is a user of the PoC Service.

PoC V1.0	Push to talk over Cellular Version 1.0
PoC V2.0	Push to talk over Cellular Version 2.0
PoC V2.1	Push to talk over Cellular Version 2.1
Policy	A policy is a plan of action based on certain defined criteria for handling the PoC Service. A Policy is established by one or more roles of the PoC Service Enabler (the PoC Service Provider, PoC Subscriber, PoC User, or enterprise customer IT department on behalf of PoC Users) and may concern, e.g., expel rights in PoC Groups, release of PoC Sessions, PoC Network privacy rules, user preferences, assignment of priority levels, etc. Policy may be applicable to different points in the end-to-end PoC Session, e.g., PoC Client, PoC Service Entity, underlying network infrastructure. Informational Note: 'PoC Service Provider' policy is a special case; see definition of "Service Provider Policy"
Pre-arranged PoC Group	A persistent PoC Group whose membership is determined by a predefined Group List. The establishment of a PoC Session to a Pre-arranged PoC Group results in all members being invited.
Pre-arranged PoC Group Session	A PoC Group Session established to a Pre-arranged PoC Group.
Pre-emptive Priority	The right for an authorised Participant who has requested the permission to send Media to be granted the right to send Media and pre-empt the current Media sender with other Priority Levels, if needed.
Pre-established Session	The Pre-established Session is a SIP Session established between the PoC Client and the Home PoC Server. The PoC Client establishes the Pre-established Session prior to making requests for PoC Sessions to other PoC Users. To establish a PoC Session based on a SIP request from the PoC User, the PoC Server conferences other PoC Servers/Users to the Pre-established Session so as to create an end-to-end connection.
Priority Levels	A feature that controls the right of individual Participants in an on-going PoC Session to make PoC Media Burst requests. Priority Levels are defined as 'Pre-emptive Priority', 'High Priority', 'Normal Priority' and 'Listen Only'.
Sender Identification	Sender Identification is the procedure by which the current Media sender's PoC Address is determined and made known to the receiving Participants on the PoC Session.
Service provider	A Service Provider is either a network operator or another entity that provides services to a subscriber (e.g. a MVNO).
Service Provider Policy	Service Provider Policy refers to the overall policy conditions actually selected by a service provider(s) for commercial implementation of a PoC Service. The Service Provider Policy is established based on commercial considerations, which may concern, e.g., support/non-support of certain network or client capabilities or service features within a network. Service Provider Policy is applicable only to the network or subscribers over which the service provider has control.
Simultaneous PoC Session	When a PoC User is a Participant in more than one PoC Session simultaneously using the same PoC Client.
SIP Session	A SIP Session is a SIP dialog. From RFC 3261 [RFC3261], a SIP dialog is defined as follows: A dialog is a peer-to-peer SIP relationship between two UAs that persists for some time. A dialog is established by SIP messages, such as a 2xx response to an INVITE request. A dialog is identified by a call identifier, local tag, and a remote tag.
SIP URI	From [RFC3261]: "A SIP or SIPS URI identifies a communications resource" and "follows the guidelines in RFC 2396 [5]". PoC uses SIP URIs to identify PoC Clients, PoC Servers, and PoC Sessions, resource lists that point to URI lists, etc.
SIP/IP Core	The SIP/IP Core includes a number of SIP proxies and SIP registrars. When SIP/IP Core is based on the 3GPP IMS or 3GPP2 MMD, the SIP/IP Core architecture is specified in [3GPP TS 23.228] or [3GPP2 X.P0013.2] respectively.
Subscriber	A network operator subscriber who may be the candidate to be a PoC service participant.
Talk Burst Control	Talk Burst Control is a control mechanism that arbitrates requests from the PoC Clients, for the right to send Voice Media. Informational Note: "Floor Control" is synonymous with Talk Burst Control

Talk-Burst/Talk Burst	Flow of Voice Media from a PoC Client that has the permission to send Voice Media to the receiving PoC Client(s).
User Equipment	User Equipment is a hardware device that supports a PoC Client e.g., a wireless phone.
Value Added PoC Service	A service, provided by the PoC Service Provider to his PoC Subscribers, that makes use of the PoC Service Enabler and other capabilities (e.g., a CS voice call).
Vote Group Types	Open group vote: The voting is open to any PoC User (e.g., the unrestricted Chat PoC Group). Closed group vote: The voting is restricted only to the PoC Group Members (e.g., the restricted Chat PoC Group).
Vote Processing Entity	Entity designated to process the voting result. This entity could either be the PoC Server, the originating PoC Client or a designated PoC Client.
Vote Response Types	Real-time vote response: As and when vote response is received from a PoC Client the response/accumulated response is forwarded to all the PoC Clients. Accumulated vote response: The vote response from PoC Clients is collected over a pre-defined time period. The voting result is computed and aggregate result is forwarded at the timeout. Any response received after the timeout is discarded.
Vote Result Types	Disclosed result vote: The voting result is sent to the PoC Users who participated the voting. Undisclosed result vote: The voting result is kept/sent only by/to the designated PoC Client (e.g., Vote originating PoC Client). Secret result vote: The voter's identity is not disclosed to the Vote Processing Entity.

3.3 Abbreviations

1-1	1-to-1
3GPP	3rd Generation Partnership Project
3GPP2	3rd Generation Partnership Project 2
BER	Bit Error Rate
BW	Bandwidth
CBUS	Condition Based URIs Selection
CDR	Charging Data Records
CS	Circuit Switched
DTMF	Dual Tone Multi-Frequency
GCSE	3GPP Group Communications Service Enabler
HDVC	Half Duplex Voice Chat
IM	Instant Messaging
IMS	IP Multimedia Subsystem
IP	Internet Protocol
IVR	Interactive Voice Response
LTE	Long Term Evolution
MCPTT	Mission Critical Push To Talk over LTE
MMD	MultiMedia Domain
MOS	Mean Opinion Score
OMA	Open Mobile Alliance
P2HDVC	PoC to Half Duplex Voice Chat
P2T	Push to Talk
P2VIM	PoC to Voice IM

PCPS V1.0	Push-to-Communicate for Public Safety, Version 1.0
PoC V1.0	Push to talk over Cellular, Version 1.0
PoC V2.0	Push to talk over Cellular, Version 2.0
PoC V2.1	Push to talk over Cellular, Version 2.1
PoC/POC	Push to Talk over Cellular
ProSe	3GPP Proximity Services
PSTN	Public Switched Telephone Network
PTT	Push to Talk
QoE	Quality of Experience
QoS	Quality of Service
RtS	Right-to-Speak
SA	System Aspects
SIP	Session Initiation Protocol
StS	Start-to-Speak
TaT	Turn-around-Time
UA	User Agent
UE	User Equipment
URI	Uniform Resource Identifier
VoIP	Voice over IP
XDM	XML Data Management
XML	Extensible Mark-up Language

4. Introduction (Informative)

The PCPS Enabler is intended to deliver a complete set of Push-to-Communicate for Public Safety application and service layer standards (for voice and data), hence the PCPS acronym. This enabler is an update from the current PoC V2.1 Enabler. The intention is to include as a baseline the requirements created for PoC as developed in [OMA PoC RD 1.0], [OMA PoC RD 2.0] and [OMA PoC RD 2.1] with updates as described below in the version section.

4.1 Version 1.0

PCPS V1.0 will have a very limited scope, serving as a limited OMA PoC Enabler Update from the current version of PoC V2.1, with no specific Public Safety requirements being added. Specific Public Safety requirements will be covered in future versions of the PCPS Enabler.

PCPS V1.0 will update PoC V2.1 to support 3GPP Release 12 LTE and relevant key features based upon completed 3GPP requirements up through Release 12.

PCPS V1.0 is being created in preparation of future PCPS versions to be aligned with 3GPP Public Safety Requirements in subsequent 3GPP Releases.

PCPS V1.0 will be synchronized to 3GPP Release 12, specifically excluding the following in progress Release 12 work:

- Group Communication System Enablers for LTE (GCSE_LTE)
- Proximity Services (ProSe)

PCPS V1.0 will be synchronized to 3GPP Release 12, to specifically include the following:

- Adapt PoC V2.1 Multicast (currently using MBMS over UTRA) to use eMBMS over LTE

Update PoC V2.1 SIP/IP Core operations to align with 3GPP Release 12 LTE architecture

5. PCPS V1.0 Release Description (Informative)

This RD contains the core requirements for the PCPS V1.0 Enabler as specified by OMA. By means of this enabler, together with other OMA service enablers, a Service provider shall be able to provide a complete service.

By using OMA PoC as the baseline for the PCPS Enabler, the resulting PCPS V1.0 service should possess the following attributes as outlined in the PCPS Release 1.0 WID:

- be optimized for LTE
- function across multiple types of access networks

No new major functionality is being added in PCPS V1.0 with respect to the existing OMA PoC baseline.

A short list of some of the existing features and functions already present in the OMA PoC baseline is mentioned here:

- The 1-to-1 communication feature is the basic capability for setting up voice communication between two users.
- The 1-to-many communication feature is the basic capability for setting up voice communication among multiple users. Different modes for the various group types exist.
    - Pre-arranged PoC Group
    - Chat PoC Group
    - Ad-hoc PoC Group
- The personal alert feature enables a user to alert another user. The alert expresses the calling user's wish to communicate and to request the invited user to "call back".
- Group lists creation & management capabilities
- Support for Media Types in addition to voice. Examples are: video, images, and text
- Support for interworking to allowing other External Push-to-Talk networks to interwork with the PoC Service Infrastructure
- Support for enhanced PoC Session handling, for example— dispatcher controlled PoC Sessions
- Support for multicast/broadcast capabilities of the underlying radio access network allowing multicast transport of downlink media in a PoC Group Session

The following figure shows some of the major actors within the PCPS Enabler. A description of each actor can be found in section [3.2 Definitions].

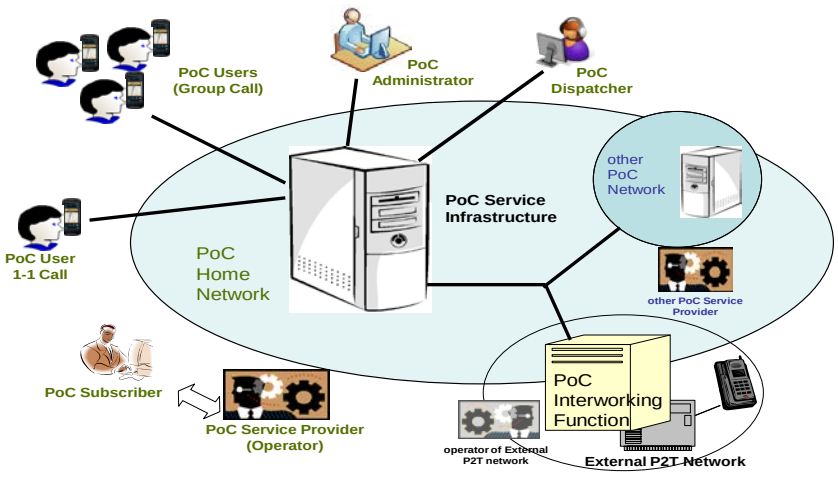


Figure 1: Actors within the PCPS Enabler

5.1 End-to-end Service Description

One of the market benefits for the creation of the PCPS Enabler is that Mobile Network Operators will be able to provide Push-to-Communicate voice and data application services for Public Safety and Critical Communications Enterprise markets that operate across multiple access technologies.

Additionally, since the existing PoC V2.1 Release predates 3GPP LTE, using this rich baseline as the basis for the OMA PCPS Enabler is timely for the wireless industry.

PCPS V1.0 provides the baseline to develop additional PCPS release versions that will support not only Mission Critical Push-to-Talk but also the non-voice applications that public safety will need.

6. Requirements (Normative)

6.1 High-Level Functional Requirements

This section contains the high level requirements for PCPS. The basic characteristics of the PCPS Service Enabler are defined below.

Note: The requirements in the following tables which are not specifically classified as **Conditionality** or **Functionality** are to be considered as **Functionality**.

Label	Description	PCPS Release
PCPS-HLF-001	A PoC User MAY either join an existing PoC Session or MAY create a PoC Session spontaneously. **Informational Note:** PoC allows users to satisfy real time, half-duplex speech communication in a simple and easy way. A PoC Participant, who wants to speak, typically initiates a PoC Session on its terminal and starts to speak. Other participants of the PoC Group Session simultaneously listen to the speaker's voice.	PCPS V1.0
PCPS-HLF-002	One PoC Participant at a time SHALL be granted the right to transmit their speech communication (i.e., to speak) after indicating their desire or intention to speak by activating a user control such as pressing a button/key, while the others on the PoC Session SHALL unless otherwise specified, receive the speech communication subject to the ability to do so, e.g. coverage, equipment not being otherwise in use etc (i.e. listen only). **Informational Note:** It allows a user to communicate with other users simultaneously in a half-duplex, arbitrated, walkie-talkie style speech communication.	PCPS V1.0
PCPS-HLF-003	PoC Users MAY communicate in a 1-to-1, one-to-many or one-to-many-to-one fashion, and/or send and receive Instant Personal Alerts.	PCPS V1.0
PCPS-HLF-004	A PoC Subscriber MAY create a PoC group. A PoC User MAY become a member of a PoC group. Only a PoC User that is member of a PoC group MAY join that PoC Group Session.	PCPS V1.0
PCPS-HLF-005	A PoC group MAY either be created by administrative means (e.g. a Pre-arranged PoC group), or by inviting and adding PoC Users to a PoC Group Session in an ad-hoc manner (i.e. creating an Ad-hoc PoC Group). An Ad-hoc PoC Group exists only for the duration of an Ad-hoc PoC Group Session.	PCPS V1.0
PCPS-HLF-006	In a chat PoC Group, PoC Users SHALL be able to join and leave the Chat PoC Group Session themselves. If the Chat PoC Group is restricted, then only group members SHALL be able to join.	PCPS V1.0
PCPS-HLF-007	The PoC Group Administrator SHALL be able to pre-define a Chat PoC Group and Pre-arranged PoC Group.	PCPS V1.0
PCPS-HLF-008	When a PoC Participant wishes to speak to the other PoC Participant, he SHALL request the “right to speak”.	PCPS V1.0
PCPS-HLF-009	The Right-to-Speak SHALL be granted by the PoC Service Entity. However, the Right-to-Speak granted SHOULD timeout if not utilised after a certain threshold (to be configured by the PoC Service Provider). As an option, subsequent requests to speak in the same PoC Session MAY be queued.	PCPS V1.0
PCPS-HLF-010	In case more than one request is queued, the PoC Service Entity MAY prioritise requests in the queue.	PCPS V1.0

PCPS-HLF-011	The voice SHALL be immediately delivered to other PoC Participants of that PoC Session who are permitted to receive it.	PCPS V1.0
PCPS-HLF-012	Current talker identities SHALL be provided to current PoC group Session participants during the ongoing PoC Session, unless the caller identity is restricted.	PCPS V1.0
PCPS-HLF-013	The PoC Host SHALL be able to terminate a PoC Group Session at any time.	PCPS V1.0
PCPS-HLF-014	The PoC Service Provider SHALL be able to terminate PoC Sessions based on its policy. **Informational Note:** The word "policy" in this requirement is to be understood as in the normal English language it does not have the meaning as defined in [PEEM].	PCPS V1.0
PCPS-HLF-015	The PoC Service Entity SHALL be able to provide the inviting PoC User with an early indication to Start-to-Speak even before invited PoC Participants accept the PoC Session request. The inviting PoC Participant SHALL receive a notification if no PoC Participants received the talk burst.	PCPS V1.0
PCPS-HLF-016	It SHOULD be possible for a PoC Service Entity to inter-work with Internet services that have similar voice capabilities (e.g. online gaming service, instant messaging service with audio functionality).	PCPS V1.0
PCPS-HLF-017	It SHALL be possible to address PoC users using an E.164 address (Note: MSISDN for GERAN/UTRAN/EUTRAN and MDN for CDMA) and/or SIP URI (Note: if E.164 is used, the handset needs to translate this to Tel URL for communication to SIP IP Core).	PCPS V1.0

Table 1: High-Level Functional Requirements

6.1.1 1-to-1 Communication Feature

This section contains the high level requirements for the PCPS 1-to-1 Communication Feature.

Label	Description	PCPS Release
PCPS-OOC-001	When the 1-to-1 PoC Session is established, the PoC Participants SHALL talk one at a time. **Informational Note:** The 1-to-1 PoC communication feature enables a PoC User to set-up a voice communication with another PoC User.	PCPS V1.0
PCPS-OOC-002	The invited PoC User either accepts the PoC Session automatically or reacts manually on the incoming PoC Session invitation.	PCPS V1.0
PCPS-OOC-003	In the Automatic Answer Mode, the inviting PoC User's voice is audible at the invited PoC User's terminal without any action by the invited PoC User.	PCPS V1.0
PCPS-OOC-004	In the Manual Answer Mode, the invited PoC User confirms the incoming invitation by an appropriate action to accept the invitation to the PoC Session.	PCPS V1.0
PCPS-OOC-005	In order to talk, a participant in a PoC Session uses Floor Control for starting and ending of the talk-burst.	PCPS V1.0

Table 2: High-Level Functional Requirements – 1-to-1 Communications

6.1.2 One-to-Many Communication Feature

This section contains the high level requirements for the PCPS One-to-Many Communication Feature. For the one-to-many PCPS communication feature, three modes are supported; namely, the pre-arranged mode, the ad hoc mode and the chat mode.

Label	Description	PCPS Release
Pre-arranged Groups		
PCPS-OMC-001	A PoC Session between pre-arranged PoC Group Members SHALL be established when any individual member of the same Pre-arranged PoC group invites the group.	PCPS V1.0
PCPS-OMC-002	The voice communication SHALL be able to start after the first PoC Group Member accepts the invitation and the initiator of the PoC Group Session establishment receives the Right-to-Speak indication.	PCPS V1.0
PCPS-OMC-003	The participation in a pre-arranged PoC Group Session SHALL be restricted to the members of the PoC group.	PCPS V1.0
PCPS-OMC-004	Members of the Pre-arranged PoC group SHALL either be invited when the PoC Group Session is established or SHALL be able to join in an ongoing session.	PCPS V1.0
PCPS-OMC-005	Any PoC Participant in the pre-arranged PoC Group Session MAY be allowed to invite additional PoC Users who are currently members of that pre-arranged group to participate in the ongoing PoC Group Session.	PCPS V1.0
Ad-hoc Groups		
PCPS-OMC-006	An ad hoc PoC Group Session SHALL be established when a PoC User selects more than one other PoC User and invites them.	PCPS V1.0
PCPS-OMC-007	The voice communication SHALL be able to start after the first PoC User accepts the invitation to participate in the ad-hoc group session the initiator of the PoC Group Session establishment and receives the Right-to-Speak indication.	PCPS V1.0
PCPS-OMC-008	To participate in an existing Ad-hoc PoC Group Session, an invitation from an Ad-hoc PoC Group Session participant SHALL be needed.	PCPS V1.0
PCPS-OMC-009	As an exception, PoC Users SHALL be able to re-join an Ad-hoc PoC Group Session for which they previously received an invitation (e.g. user rejects invite, left the session).	PCPS V1.0
Chat Groups		
PCPS-OMC-010	A Chat PoC Group Session SHALL be established as soon as the first PoC User joins in.	PCPS V1.0
PCPS-OMC-011	The voice communication between chat group participants SHALL be possible at the time the Chat PoC Group Session is established.	PCPS V1.0
PCPS-OMC-012	A PoC User SHALL be able to establish a Chat PoC Group Session or join into an ongoing Chat PoC Group Session.	PCPS V1.0
PCPS-OMC-013	A PoC User MAY be invited to the chat PoC Session.	PCPS V1.0
PCPS-OMC-014	The participation in a Chat PoC Group Sessions MAY be restricted, or unrestricted.	PCPS V1.0

Table 3: High-Level Functional Requirements – One-to-Many Communications

6.1.3 Instant Personal Alert Feature

This section contains the high level requirements for the PCPS Instant Personal Alert feature. Instant Personal Alert allows a PoC User to request another PoC User to initiate a 1-to-1 communication back to the originator.

Label	Description	PCPS Release
PCPS-IPA-001	The invited PoC User SHALL be able to recognize the Instant Personal Alert request, together with the inviting PoC User's identity, subject to the inviting PoC Subscriber's privacy rules.	PCPS V1.0
PCPS-IPA-002	The alerted PoC User SHALL be able to initiate a PoC Session with the alerting User in response to receiving the alert, possibly at some later time.	PCPS V1.0
PCPS-IPA-003	The PoC Client SHALL be able to receive and MAY be able to send Instant Personal Alerts.	PCPS V1.0
PCPS-IPA-004	Since Instant Personal Alert does not create a PoC Session, a PoC User's presence condition SHALL not be affected by Instant Personal Alerts. **Informational Note:** See Section [6.1.22 Presence Requirements].	PCPS V1.0
PCPS-IPA-005	According to the description in [6.1.6 Management], a PoC User MAY maintain the identities of other PoC Users from whom he does not wish to receive PoC talk requests. The same rejection conditions MAY apply to Instant Personal Alerts, subject to PoC Service Provider policy.	PCPS V1.0
PCPS-IPA-006	The Do-not-Disturb Presence feature SHALL not apply to Instant Personal Alerts, except as defined in PCPS-PRS-006.	PCPS V1.0
PCPS-IPA-007	A PoC User who is participating in a PoC Session SHALL be able to receive and send Instant Personal Alerts.	PCPS V1.0

Table 4: High-Level Functional Requirements – Instant Personal Alert

6.1.4 Session Setup Procedures

This section contains the high level requirements for PCPS Session Setup.

Informational Note: For more information about Start-to-Speak and subsequent Floor Control, reference section [6.1.5 Communication Phase Requirements].

Label	Description	PCPS Release
1-to-1 PoC Session Setup		
PCPS-SSP-001	The inviting PoC User SHALL invite another PoC User to participate in the 1-to-1 PoC Session.	PCPS V1.0
PCPS-SSP-002	The PoC Service Entity MAY provide an early Start-to-Speak indication to the inviting party before the invited PoC User answers the invitation.	PCPS V1.0
PCPS-SSP-003	If the invited party accepts the invitation, the inviting PoC User SHALL receive an indication that the invited PoC User has accepted the invitation.	PCPS V1.0
PCPS-SSP-004	The inviting PoC User MAY keep or discontinue the PoC Session (e.g. reject the invited party's accept if he took too long to answer).	PCPS V1.0
PCPS-SSP-005	If the inviting PoC User keeps the PoC Session and receives the ready-to-speak indication, the inviting party MAY start to talk, otherwise speaking is not permitted.	PCPS V1.0
PCPS-SSP-006	The speech of the inviting PoC User SHALL be delivered as soon as the invited PoC User accepts the PoC Session invitation.	PCPS V1.0
Pre-arranged Group PoC Session Setup		

PCPS-SSP-007	A member of a prearranged PoC group SHALL be able to request the establishment of a PoC Session to all members of the prearranged PoC group by using a single group identity and waits for establishment indication. **Informational Note:** A pre-arranged PoC Group List already exists and contains some PoC Group Members. One of the PoC Group Members wants to speak to other PoC Group Members.	PCPS V1.0
PCPS-SSP-008	The PoC Service Entity SHALL be able to allow only the PoC Group Administrator to originate the pre-arranged PoC Group Session.	PCPS V1.0
PCPS-SSP-009	The PoC Service Entity SHALL invite all accessible PoC Group Members to participate in the PoC Session.	PCPS V1.0
PCPS-SSP-010	The PoC Service Entity MAY provide an early Start-to-Speak indication.	PCPS V1.0
PCPS-SSP-011	The PoC Service Entity SHALL be able to receive a confirmation indication (e.g. accept, reject) from each invited PoC Group Member.	PCPS V1.0
PCPS-SSP-012	The inviting PoC User SHALL receive a notification if none of the invited PoC Users accept the invitation.	PCPS V1.0
PCPS-SSP-013	The inviting PoC User MAY receive indications that the invited PoC User(s) has accepted the invitation.	PCPS V1.0
PCPS-SSP-014	The PoC communication SHALL be possible to start as soon as at least one of the invited members accepted the invitation.	PCPS V1.0
PCPS-SSP-015	The speech of the inviting PoC Group Member SHALL be delivered as soon as at least one of the invited PoC Group Members accepts the PoC Session invitation.	PCPS V1.0
PCPS-SSP-016	A PoC Group Member of the group SHALL be able to join the ongoing PoC Session. This SHALL NOT cause any invitations to the members currently not participating in the PoC Session.	PCPS V1.0
PCPS-SSP-017	It SHALL be possible for the service provider to configure the maximum number PoC Participants in a pre-arranged PoC Group Session.	PCPS V1.0
PCPS-SSP-018	A PoC Participant that has been disconnected from the pre-arranged PoC Group Session SHALL be able to re-join the same PoC Group Session, if it is still ongoing and the maximum number of PoC Participants is not exceeded. Otherwise the re-join procedure SHALL be rejected.	PCPS V1.0
PCPS-SSP-019	The PoC Service Entity SHALL be able to provide the inviting PoC User with an early indication to Start-to-Speak even before invited PoC Participants accept the PoC Session request.	PCPS V1.0
Ad-hoc Group PoC Session Setup		
PCPS-SSP-020	A PoC User SHALL be able to invite selected PoC Users to the Ad-hoc PoC Group Session. **Informational Note:** A PoC group does not exist yet and a PoC User wants to establish PoC Session with several PoC Users.	PCPS V1.0
PCPS-SSP-021	When at least one PoC User has accepted the invitation the inviting PoC User and the accepting PoC User SHALL be able to start the PoC Session.	PCPS V1.0
PCPS-SSP-022	The inviting PoC User SHALL receive a notification if none of the invited PoC Users accept the invitation.	PCPS V1.0
PCPS-SSP-023	It SHALL be possible for the PoC Service Provider to configure a maximum number of PoC Participants in an ad-hoc group session.	PCPS V1.0

PCPS-SSP-024	A PoC Participant who has been disconnected from the Ad-hoc PoC Group Session SHALL be able to re-join the same PoC Session if it is still ongoing and the maximum number of PoC Participants is not exceeded. Otherwise, the re-join procedure SHALL be rejected.	PCPS V1.0
PCPS-SSP-025	The PoC Service Entity SHALL be able to provide the inviting PoC User with an early indication to Start-to-Speak even before invited PoC Participants accept the PoC Session request.	PCPS V1.0
Reception of PoC Session Invitation		
Informational Note: The invitation in this section applies to either 1-to-1 or 1-many PoC Sessions.		
PCPS-SSP-026	The invited PoC User SHALL get an identity of the inviting PoC User and the identity of the pre-arranged group being invited, if such an identity exists, subject to privacy rules.	PCPS V1.0
PCPS-SSP-027	The invited PoC Client SHOULD support auto-answer or manual answer or both. When both Answer Modes are supported the PoC Client SHALL support the setting of the answer mode. The PoC Service Entity SHALL support both Answer Modes and Answer Mode setting.	PCPS V1.0
PCPS-SSP-028	If the invited PoC User has activated the auto-answer setting, he SHALL hear the speech from other PoC Participants without any action by the invited PoC User (e.g. without manually answering the PoC Session invitation).	PCPS V1.0
PCPS-SSP-029	As an option, if the invited PoC User has activated the manual-answer setting, he SHALL be alerted of an incoming PoC Session invitation. The invited PoC User SHALL be able to accept, ignore or reject the invitation manually.	PCPS V1.0
Joining a Chat PoC Group Session		
PCPS-SSP-030	A PoC User SHALL be able to join a Chat PoC Group Session (e.g. restricted or unrestricted chat group) depending on the access rules.	PCPS V1.0
PCPS-SSP-031	It SHALL be possible for the PoC Service Provider to configure a maximum number of participants in a Chat PoC Group.	PCPS V1.0
PCPS-SSP-032	The PoC Service Entity SHALL be able to reject the joining PoC User when the PoC User is not a member of the restricted group. In this case, the PoC Service Entity SHALL provide a reject indication and cause to the rejected PoC User.	PCPS V1.0
PCPS-SSP-033	The PoC Service Entity SHALL be able to reject the joining PoC User when the maximum number of participants has already joined the group session. In this case, the PoC Service Entity SHALL provide a reject indication and cause to the rejected PoC User.	PCPS V1.0
PCPS-SSP-034	The PoC Service Entity SHALL be able to reject the joining PoC User when the requested group does not exist. In this case, the PoC Service Entity SHALL provide a reject indication and cause to the rejected PoC User.	PCPS V1.0
PCPS-SSP-035	The joining PoC User SHALL be able to start communicating with other PoC Participants in Chat PoC Group.	PCPS V1.0
PCPS-SSP-036	A PoC User SHALL NOT be forced to reveal his identity to other participants in an open Chat PoC Group.	PCPS V1.0

Table 5: High-Level Functional Requirements – Session Setup

6.1.5 Communication Phase Requirements

This section contains the high level requirements for the PCPS communication phase. The communication phase relates directly to the transfer of audio. It includes Floor Control, session join, session Participant Information, and session termination.

Label	Description	PCPS Release
Floor Control		
PCPS-COM-001	Floor Control SHALL be able to indicate to a PoC Service Entity that a PoC Participant requests to speak. **Informational Note:** Floor Control is the mechanism for the arbitration of the sequence of PoC Participants to speak.	PCPS V1.0
PCPS-COM-002	Floor Control SHALL be able to indicate permission to a PoC Participant to speak in response to a request.	PCPS V1.0
PCPS-COM-003	Floor Control SHALL be able to indicate to a PoC Participant that a Request-to-Speak has been denied.	PCPS V1.0
PCPS-COM-004	Floor Control SHALL be able to indicate to a PoC Service Entity that the participant has finished speaking.	PCPS V1.0
PCPS-COM-005	Floor Control SHALL be able to indicate to a PoC Participant that his speaking has been forced-released.	PCPS V1.0
PCPS-COM-006	Floor Control SHALL be able to indicate to all PoC Participants that the granted PoC Participant has finished speaking and floor is idle.	PCPS V1.0
PCPS-COM-007	Floor Control SHALL be able to indicate to all PoC Participants that the PoC Participant is about to speak (i.e. a PoC Participant has been granted the Right-to-Speak).	PCPS V1.0
PCPS-COM-008	Performance requirements related to Floor Control SHOULD consider the constraints imposed by the underlying signalling transport, with particular emphasis on those associated with over-the-air transport.	PCPS V1.0
Floor Request Queuing		
PCPS-COM-009	Implementations of the PoC Service Enabler and PoC Client in the terminal device MAY support Floor Request Queuing.	PCPS V1.0
PCPS-COM-010	If Floor Request Queuing is supported, Floor Control SHALL be able to indicate to a PoC Participant that a Request-to-Speak has been queued.	PCPS V1.0
PCPS-COM-011	If Floor Request Queuing is supported, Floor Control SHALL be able to permit a PoC Participant who has requested the floor to obtain his or her position in the floor request queue.	PCPS V1.0
PCPS-COM-012	If Floor Request Queuing is supported, Floor Control SHALL be able to permit more than one level of priority in access to the floor, e.g. a higher priority PoC Participant MAY be allowed to pre-empt a lower priority PoC Participant.	PCPS V1.0
PCPS-COM-013	If Floor Request Queuing is supported, Floor Control SHALL be able to allow the requester to cancel the request.	PCPS V1.0
Joining a PoC Session		
PCPS-COM-014	A PoC User SHALL be able to join an ongoing PoC Group Session, if the maximum number of participants is not exceeded. **Informational Note:** Joining a PoC Session applies to members of pre-arranged or restricted Chat PoC Groups.	PCPS V1.0

PCPS-COM-015	For unrestricted Chat PoC Group Sessions, any PoC User MAY join.	PCPS V1.0
PCPS-COM-016	For ad-hoc PoCgroup sessions, joining SHALL only be allowed if the PoC User was a PoC Participant in the Ad-hoc PoC Group Session before, left it and then re-joins it.	PCPS V1.0
PoC Session Participant Information		
PCPS-COM-017	PoC Session Participant Information SHALL be able to be delivered if requested, and is not restricted. The modes of retrieving the PoC Session participant information are: • Request information on who is currently participating in the PoC Group Session at this time. • Request continuous information on who is participating in the PoC Group Session. The mode SHALL be selectable by the PoC Participant.	PCPS V1.0
PCPS-COM-018	In the case of requesting continuous information, there SHALL be an indication when: • A PoC Participant leaves or is removed from the PoC Session. • A PoC Participant joins or is added to the PoC Session.	PCPS V1.0
PCPS-COM-019	The PoC Participant MAY also choose not to request any PoC Session participant information.	PCPS V1.0
Adding PoC User(s) to, Removing PoC User(s) from, and PoC Users Leaving a PoC Session		
PCPS-COM-020	A participant of the PoC Session SHALL be able to add new user(s) into the 1-to-1 PoC Group Session, Pre-arranged PoC Group Session, or Ad-hoc PoC Group Session only.	PCPS V1.0
PCPS-COM-021	When adding PoC User(s) to a PoC Session, the inviting PoC User and the PoC Host SHALL receive notification of the result of the invitation as per the invited PoC User. The notification can be for example: an invited PoC User accepted the invitation; an invited PoC User rejected the invitation; an invited PoC User was unavailable.	PCPS V1.0
PCPS-COM-022	Reception of “unavailable” condition notifications by the inviting PoC User or PoC Host, SHALL be subject to his Presence service subscription, if one exists, or to PoC Service Provider policy, as applicable. **Informational Note:** See reference [6.1.22 Presence Requirements].	PCPS V1.0
PCPS-COM-023	After the PoC Session is accepted the newly added PoC Participant SHALL receive the status of the floor.	PCPS V1.0
PCPS-COM-024	The added participant MAY be notified with the identities of all current participants whose identities are not restricted.	PCPS V1.0
PCPS-COM-025	Addition of a PoC User SHALL not affect the ongoing communication.	PCPS V1.0
PCPS-COM-026	The added user’s Identity SHALL be included in the list of participants (subject to restriction policy), which is distributed to those session participants who have requested the participant information updates, subject to privacy rules.	PCPS V1.0
PCPS-COM-027	It SHALL be possible to add users to a PoC Group Session as long as the maximum number of PoC group participants is not exceeded.	PCPS V1.0

PCPS-COM-028	The maximum number of PoC Participants MAY be set by the PoC Service Provider and MAY vary for each PoC Group.	PCPS V1.0
PCPS-COM-029	A PoC Participant SHALL be able to leave the PoC Session at any time.	PCPS V1.0
PCPS-COM-030	The PoC Service Entity SHALL be able to remove a PoC Participant from the PoC Session.	PCPS V1.0
PoC Session termination by Service Provider		
PCPS-COM-031	A PoC Session SHALL terminate according to the PoC Service Provider policy.	PCPS V1.0
PCPS-COM-032	If there are still PoC Participants left in the PoC Session that is terminated by the PoC Service Provider, those PoC Participants SHALL be removed from the PoC session and no PoC Participant SHALL be able to rejoin.	PCPS V1.0

Table 6: High-Level Functional Requirements – Communication Phase

6.1.6 Management

This section contains the high level requirements for the Management capabilities of the PCPS Service Enabler.

Label	Description	PCPS Release
Configuration		
PCPS-MAN-001	PoC Subscribers SHALL be able to generate and manage PoC Subscriber defined pre-arranged PoC Group Lists to be utilized by the PoC Service Entity.	PCPS V1.0
PCPS-MAN-002	PoC Subscribers SHALL be able to generate and manage PoC Subscriber defined Chat PoC Groups.	PCPS V1.0
PCPS-MAN-003	PoC Users SHALL be able to manage PoC Session treatment methods including Presence features - if supported, auto accept vs. manual accept and rejection based on identity of inviting PoC Users.	PCPS V1.0
PCPS-MAN-004	PoC Users SHALL be able to generate and manage a PoC User's own contact list.	PCPS V1.0
PCPS-MAN-005	PoC Service Providers SHALL be able to generate and manage the PoC subscriptions.	PCPS V1.0
PCPS-MAN-006	PoC Service Providers SHALL be able to generate and manage Pre-arranged PoC Group and Chat PoC Group Lists, and accept/reject lists.	PCPS V1.0
PCPS-MAN-007	PoC Client administration and configuration SHOULD be possible using the existing OMA Device Management Enabler.	PCPS V1.0
PCPS-MAN-008	A PoC User MAY be a member of more than one PoC group at the same time.	PCPS V1.0
Session Termination Policy		
PCPS-MAN-009	The PoC Service Provider SHALL be able to cause the termination of the PoC Session due to termination by PoC Group Administrator.	PCPS V1.0
PCPS-MAN-010	The PoC Service Provider SHALL be able to cause the termination of the PoC Session due to termination upon the last PoC Participant leaving the PoC Session.	PCPS V1.0
PCPS-MAN-011	The PoC Service Provider SHALL be able to cause the termination of the PoC Session due to termination upon the second to last PoC Participant leaving the PoC Session.	PCPS V1.0

PCPS-MAN-012	The PoC Service Provider SHALL be able to cause the termination of the PoC Session due to termination upon the initiator leaving the PoC Session.	PCPS V1.0
PCPS-MAN-013	The PoC Service Provider SHALL be able to cause the termination of the PoC Session due to termination after a pre-defined time period.	PCPS V1.0
PCPS-MAN-014	The PoC Service Provider SHALL be able to cause the termination of the PoC Session due to termination after a pre-defined time period without any talk-burst traffic in the PoC Session.	PCPS V1.0
State Transition of Actors – See Figure 2		
PCPS-MAN-015	Before an individual user can use PoC service features, the user SHALL have a network subscription with one or more (cellular) network operators.	PCPS V1.0
PCPS-MAN-016	A subscriber SHALL first subscribe to a PoC service offered by a PoC Service Provider. Once the subscription is completed, he becomes a PoC Subscrber.	PCPS V1.0
PCPS-MAN-017	Before a PoC User can become a PoC Participant he SHALL either "be invited to the PoC Session and accept the invitation" or "request to participate in the PoC Session and have the request accepted." When he becomes a PoC Participant, he is able to receive and transmit talk burst in the PoC Session. **Informational Note:** The host is also an entity, but with the special attribute in the PoC Participant. The host does not explicitly appear in the diagram.	PCPS V1.0
PoC Group and Contact List Management		
PCPS-MAN-018	The PoC User uses a pre-arranged and Chat PoC Group as a means to establish a PoC Session where the PoC group attributes control the session type and who MAY participate in the PoC Session. A pre-arranged and Chat PoC Group Identity SHALL be used to address the group and initiate a PoC Session.	PCPS V1.0
PCPS-MAN-019	A PoC User SHOULD have means to store the addresses of PoC Users, pre-arranged groups, and Chat PoC Groups in order to use that information to contact those using PoC features. For this purpose a PoC User SHOULD have at least one contact list.	PCPS V1.0
PCPS-MAN-020	Following the creation of the contact list the PoC Subscriber SHOULD be able to create PoC groups by associating individual entries on his contact list. Each individual contact can be associated with a single PoC group, several or all PoC groups.	PCPS V1.0
PCPS-MAN-021	A PoC Subscriber SHOULD be able to create & manage PoC Group Lists from his handset or in a server in the service provider's intranet or the Internet.	PCPS V1.0
PCPS-MAN-022	It SHALL be possible to form PoC groups that include PoC Users from different PoC Service Providers.	PCPS V1.0
PCPS-MAN-023	The maximum number of PoC Group Members in a PoC Group SHALL be configurable by the PoC Service Provider.	PCPS V1.0
PCPS-MAN-024	The maximum number of PoC groups that can be created and managed by a PoC Subscriber SHALL be configurable by the PoC Service Provider.	PCPS V1.0
PCPS-MAN-025	PoC Group List management SHOULD have safeguards (e.g. passwords) to prevent mis-use or unintended generation of traffic to the network.	PCPS V1.0
PoC Answer Mode and Accept/Reject List Management		

PCPS-MAN-026	If the PoC User sets the Answer Mode to "auto", PoC Session invitations from PoC Users or PoC groups on the accept list SHALL be answered automatically. If the Answer Mode setting is set to "manual", then the Manual Answer Mode is applied. **Informational Note:** There is an Answer Mode setting which is controlled by the invited PoC User.	PCPS V1.0
PCPS-MAN-027	As soon as Answer Mode setting is set to "manual" on the terminal, audio SHALL not be played automatically by the PoC user's terminal. **Informational Note:** If the optional Manual Answer Override is supported and Manual Answer Override has been requested by the inviting PoC User and authorised by the invited PoC User, then the PoC Session invitation is answered automatically.	PCPS V1.0
PCPS-MAN-028	The PoC Service Entity SHALL maintain a list of sources per PoC User that are to be rejected with no notification to the PoC User. **Informational Note:** On the reject list the PoC Subscriber maintains the identities of PoC Users and/or PoC groups from whom the PoC Subscriber does not wish the PoC User to receive PoC Session invitations. On the accept list, the PoC Subscriber maintains the identities of PoC Users and/or PoC groups from whom the PoC Subscriber agrees for the PoC User to receive PoC Session invitations.	PCPS V1.0
PCPS-MAN-029	The PoC Service Entity SHALL reject PoC Session invitations destined for a PoC User when he has notified the service provider that he wishes to reject all PoC Session invitations from the specified sources.	PCPS V1.0

Table 7: High-Level Functional Requirements – Management

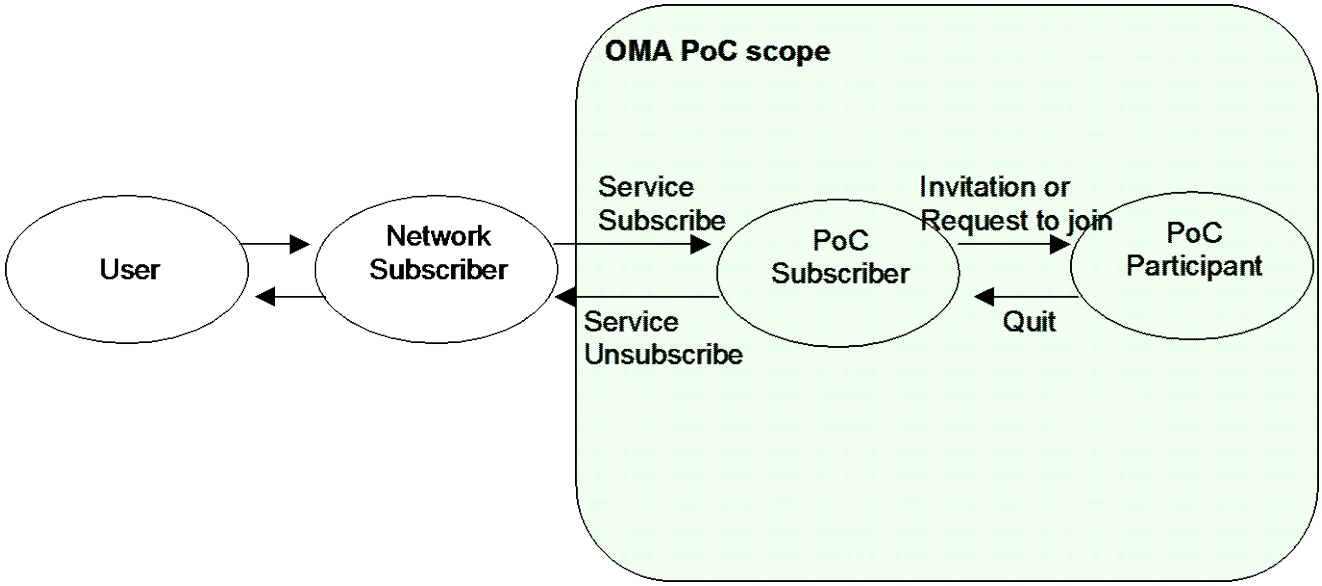


Figure 2: OMA PoC State Transition of Actors

6.1.7 Usability

6.1.7.1 General Usability Requirements

This section contains the General Usability requirements for the PCPS Service Enabler.

Label	Description	PCPS Release
PCPS-USA-001	The PoC Service Entity SHALL NOT prevent the PoC User's operation of other OMA compatible services, for which the PoC User is authorised and subscribed.	PCPS V1.0
PCPS-USA-002	The PoC Service Provider SHALL be able to decide the maximum number of PoC Participants supported in a PoC Group Session.	PCPS V1.0
PCPS-USA-003	Administrative rights of an active PoC Group Session MAY be assigned to any of the participants by the session Host, or the PoC Service Provider.	PCPS V1.0
PCPS-USA-004	If request-to-speak queuing is supported, it SHALL be possible to queue more than one request-to-speak at the same time.	PCPS V1.0
PCPS-USA-005	The PoC application on the handset SHALL run concurrently with other service applications in the device.	PCPS V1.0
PCPS-USA-006	A specific mode of operation SHALL NOT be required of the handset, which could restrict other service operations.	PCPS V1.0
PCPS-USA-007	Concurrent service execution SHALL be supported by the PoC Service Enabler (e.g., take a telephony call, putting a PoC Session on hold), but MAY be limited by capabilities of the supporting network or the ability of the handset device. The PoC Service Enabler SHALL NOT restrict concurrent service execution.	PCPS V1.0

Table 8: General Usability Requirements

6.1.7.2 Multiple PoC Clients with the Same PoC Address

This section contains the high level requirements for Multiple PoC Clients with the Same PoC Address functionality of the PCPS enabler.

Multiple PoC Clients with the Same PoC Address allows a PoC User to register more than one PoC Client using the same PoC Address.

Label	Description	PCPS Release
Conditionality		
PCPS-MPC-001	The PoC Service Infrastructure SHALL support registration of multiple PoC Clients with the same PoC Address and handle PoC Service Settings when set from multiple User Equipment having the same PoC Address.	PCPS V1.0
PCPS-MPC-002	The PoC Client SHALL support multiple registration of PoC Clients with the same PoC Address and handle PoC Service Settings when set from multiple User Equipment having the same PoC Address.	PCPS V1.0
Functionality		
PCPS-MPC-003	When inviting a PoC User who has multiple PoC Clients with the same PoC Address to a PoC Session all the PoC Clients with the PoC Address of the invited PoC User SHALL be invited to the PoC Session.	PCPS V1.0
PCPS-MPC-004	If multiple PoC Clients with the same PoC Address are invited to the same PoC Session and more than one of the PoC Clients accepts the invitation then only the first PoC Client to accept the invitation SHALL receive Media Bursts and all other PoC Clients with the same PoC Address that accept the invitation SHALL be released from the PoC Session.	PCPS V1.0

PCPS-MPC-005	The PoC Service Settings of one PoC Client SHALL be treated independently of those of other PoC Clients with the same PoC Address and when inviting multiple PoC Clients with the same PoC Address to a PoC Session each PoC Client SHALL be invited according to their own PoC Service Settings.	PCPS V1.0
PCPS-MPC-006	When multiple PoC Clients with the same PoC Address are registered for the PoC Service, the PoC Client SHALL be notified that other PoC Clients are registered for the PoC Service with the same PoC Address. **Informational Note:** This requirement may impact on the PoC Service Infrastructure or the SIP/IP Core.	PCPS V1.0
PCPS-MPC-007	The PoC Service Provider SHALL have the ability to limit the number of PoC Clients that can share the same PoC Address. **Informational Note:** This requirement may impact on the PoC Service Infrastructure or the SIP/IP Core.	PCPS V1.0
PCPS-MPC-008	A PoC Client SHALL have the ability to obtain the PoC Service Settings of all the currently registered PoC Clients sharing the same PoC Address when the PoC Client requests its PoC Service Settings.	PCPS V1.0

Table 9: Multiple PoC Clients with the same PoC Address

6.1.8 Additional Media Types

PCPS Service facilitates communication among PoC Users using Media Types, in addition to voice. The additional Media Types supported could be still images, live-streamed video, file transfer and text, but not limited to the above-mentioned list. In contrast to voice or video, text messaging within PoC Service in general will not require Media Burst Control.

A PoC Server provides support for more than one Media Type in a PoC Session. PoC Clients can support more than one Media Type in a PoC Session, based on the capabilities of the User Equipment.

Label	Description	PCPS Release
Conditionality		
PCPS-AMT-001	A PoC Client MAY support the feature for handling Additional Media Types.	PCPS V1.0
PCPS-AMT-002	A PoC Infrastructure SHALL support the feature for handling Additional Media Types.	PCPS V1.0
Functionality		
Overall		
PCPS-AMT-003	The PoC Service Infrastructure SHALL support mechanisms that guarantee end-to-end interoperability when considering the introduction of Additional Media Types in PoC.	PCPS V1.0
PCPS-AMT-004	The PoC Client SHALL have means to set one or more of the offered Media component(s) inactive in the PoC Session set-up and set those active later during the PoC Session, if needed.	PCPS V1.0
Voice		
PCPS-AMT-005	If a PoC Client supports the feature for handling Additional Media Types, the PoC User MAY be able to invoke a PoC Session without PoC voice Media, but with one or more rich Media Streams (e.g., images, video). In other words, voice Media SHALL not be a mandatory Media in a PCPS V1.0 Session.	PCPS V1.0

PCPS-AMT-006	Any PoC Session Participant with a PoC Client supporting the feature for handling Additional Media Types SHALL be able to add PoC voice anytime during an existing PCPS V1.0 Session consisting of only rich Media (e.g., images, video).	PCPS V1.0
Images or Series of Images		
PCPS-AMT-007	If a PoC Client supports images or series of images the PoC Client MAY send images or series of images that are available in the User Equipment (e.g., from a camera) to the Participants of the PoC Session.	PCPS V1.0
PCPS-AMT-008	The PoC Server SHALL support the transfer of images or series of images sent by the PoC Client to those Participants of the PoC Session, that are able to receive and display images or series of images.	PCPS V1.0
PCPS-AMT-009	If a PoC Client supports images or series of images the PoC Client SHALL be able to receive and display images or series of images. The receiving PoC Client MAY be able to store images or series of images in local memory for playback use, subject to digital rights management restrictions.	PCPS V1.0
Live-streamed video		
PCPS-AMT-010	The PoC Client MAY be able to send live-streamed video (e.g., from a camera) or pre-recorded video that is available in the User Equipment to the Participants of the PoC Session.	PCPS V1.0
PCPS-AMT-011	The PoC Server SHALL support the transfer of live-streamed video that is available in the User Equipment (e.g., from a camera) to those Participants of the PoC Session that are able to receive and display live-streamed video.	PCPS V1.0
PCPS-AMT-012	If a PoC Client supports streamed video the PoC Client SHALL be able to receive and display live-streamed video. The receiving PoC Client MAY be able to store the video in local memory for playback use, subject to digital rights management restrictions.	PCPS V1.0
PCPS-AMT-013	If the PoC Client supports Continuous Media other than voice, a PoC User using voice MAY add Continuous Media other than voice (e.g., video) to the PoC Session.	PCPS V1.0
Transfer of Files		
PCPS-AMT-014	If a PoC Client supports files the PoC Client MAY be able to send files that are available in the User Equipment (e.g., a MS word document, a game software package) to the Participants of the PoC Session.	PCPS V1.0
PCPS-AMT-015	The PoC Server SHALL support the transfer of files that are available in the User Equipment (e.g., a MS word document, a game software package) to those Participants of the PoC Session that are able to receive files.	PCPS V1.0
PCPS-AMT-016	If a PoC Client supports files the PoC Client SHALL be able to receive files. The receiving PoC Client MAY be able to store files in local memory for playback use, subject to digital rights management restrictions.	PCPS V1.0
External Media Support		
PCPS-AMT-017	The PoC Client MAY be able to request the PoC Server to access and send the Media (e.g., live-streamed video, pictures) residing in an External Media Content Server by the PoC Service to other Participants in the PoC Session.	PCPS V1.0

PCPS-AMT-018	The PoC Server MAY be able to retrieve and transfer the Media residing in an External Media Content Server (e.g., a video streaming server) to Participants in the PoC Session, on behalf of the PoC Client request. A PoC Server with this capability SHALL support the following Media Types: images or series of images, streamed video, and files	PCPS V1.0
Video Streams		
PCPS-AMT-019	PoC User with a PoC Client supporting voice and video SHALL request permission from the PoC Service Infrastructure before sharing a video stream in a PoC Session.	PCPS V1.0
PCPS-AMT-020	If a PoC Session includes video streams (in addition to voice), the PoC Infrastructure SHOULD support a capability to configure a preferred mode of video streaming on PoC Client. This configuration MAY be done either • Due to the limitations of the PoC Client • Configured by PoC Service Provider, or • Configured by the PoC User The modes of sending video streams in conjunction with voice are: • Single source mode: Both PoC voice and PoC video comes from the same Participant in a PoC Session in near real time. • Multiple sources mode: PoC voice is sent from one Participant and PoC video is sent from another Participant in the same PoC Session.	PCPS V1.0
PCPS-AMT-021	PoC Server SHALL support single and multiple source modes of sending video streams in conjunction with voice.	PCPS V1.0
PCPS-AMT-022	If the PoC Client supports voice and video it SHALL support single and multiple source modes of sending and receiving video streams in conjunction with voice.	PCPS V1.0
Text		
PCPS-AMT-023	If a PoC Client supports text the PoC Client MAY send text that is available in the User Equipment to the Participants of the PoC Session.	PCPS V1.0
PCPS-AMT-024	If a PoC Client supports text the PoC Client MAY send text that is available in the User Equipment to a subset of the Participants of the PoC Session.	PCPS V1.0
PCPS-AMT-025	The PoC Server SHALL support the transfer of text sent by the PoC Client.	PCPS V1.0
PCPS-AMT-026	If a PoC Client supports text the PoC Client SHALL be able to receive and display the received text. The receiving PoC Client MAY be able to store the received text in local memory.	PCPS V1.0
PCPS-AMT-027	If the PoC Client supports text it SHALL support sending text in conjunction with voice and/or video.	PCPS V1.0
PCPS-AMT-028	If the PoC Client supports text the PoC Client MAY start a PoC Session with text messaging Media only. A PoC User using text messaging MAY add another Media (e.g., voice) to the PoC Session.	PCPS V1.0
PCPS-AMT-029	PoC User with a PoC Client supporting text SHALL be able to send text messages to other PoC Users and PoC Groups.	PCPS V1.0

Discrete Media content		
PCPS-AMT-030	In a given PCPS V1.0 Session with Discrete Media it SHALL be possible to indicate back to the sender the status (e.g., start/end/progress steps) of the Media transfer.	PCPS V1.0
PCPS-AMT-031	If a PoC Client supports Discrete Media, PoC User using voice MAY add Discrete Media (e.g., images) to a PoC Session.	PCPS V1.0
Identity		
PCPS-AMT-032	Identity of Media sender SHALL be provided to recipients of Media in a PoC Session, subject to privacy rules.	PCPS V1.0
PCPS-AMT-033	The description of Media (e.g., title of video) MAY be provided to other Participants in company with Media.	PCPS V1.0
Multiple Media Streams of the same Media Type		
PCPS-AMT-034	A PoC User authorized to add, or modify Media Types in the PoC Session where multiple Media Streams of the same Media Type are contained in a PoC Session, MAY indicate the manner in which they are rendered together on the PoC Client receiving these Media Streams **Informational Note:** The intention of the requirement is to also cover the case when the client is unable to receive all the offered Media streams of the same Media Type.	PCPS V1.0
PCPS-AMT-035	The PoC infrastructure MAY indicate the manner in which the Media Streams of the same Media Type are rendered together on the PoC Client receiving the Media Streams of the same Media Type by fetching group attributes in case of Chat PoC Group Session or Pre-arranged Group Session.	PCPS V1.0

Table 10: Additional Media Types

6.1.9 Enhanced PoC Session Establishment

6.1.9.1 Requests with Media Contents

This section contains the high level requirements for Requests with Media Contents of the PCPS Service Enabler.

When inviting PoC User(s) to a PoC Session, or when sending a Group Advertisement message, media contents can be added to the requests.

Label	Description	PCPS Release
Conditionality		
PCPS-RMC-001	The PoC Service Infrastructure MAY support adding media content to PoC Session invitations or Group Advertisement messages.	PCPS V1.0
PCPS-RMC-002	The PoC Client MAY support adding media content to PoC Session invitations or Group Advertisement messages.	PCPS V1.0
Functionality		
PCPS-RMC-003	A PoC Client MAY add media content to a PoC Session invitation(s) sent to PoC User(s).	PCPS V1.0
PCPS-RMC-004	A PoC Client SHALL support receiving of PoC Session invitation(s) that includes media content. Depending on the PoC Client's capability for the included media content, the PoC Client SHOULD replay the received media content.	PCPS V1.0
PCPS-RMC-005	A PoC Client MAY add media content to Group Advertisement message(s) sent to PoC User(s)	PCPS V1.0

PCPS-RMC-006	A PoC Client MAY support the receiving Group Advertisement message(s), which MAY include media content from PoC User(s). Depending on the PoC Clients capability for the included media content, the PoC Client SHOULD replay the received media content.	PCPS V1.0
PCPS-RMC-007	The PoC Service Infrastructure MAY remove media content(s) to the PoC Session invitation(s) according to the configuration set by inviting and invited PoC Client.	PCPS V1.0
PCPS-RMC-008	The PoC Service Infrastructure MAY add/change media content(s) to the PoC Session invitation(s) according to the configuration set by inviting and invited PoC Client.	PCPS V1.0
PCPS-RMC-009	Media content SHALL be either a reference to the media content or contain the content directly. Examples of content types can be found in [RFC2046]	PCPS V1.0
PCPS-RMC-010	The PoC Service Infrastructure MAY be able to remove media content according to the reference to the media content	PCPS V1.0
PCPS-RMC-011	The PoC Service Infrastructure MAY be able to add/change media content according to the reference to the media content.	PCPS V1.0
PCPS-RMC-012	It SHALL be possible to limit the size and type of the media content based on PoC Service Provider Policies of the inviting and invited PoC Users and/or setting of Inviting PoC Client and invited PoC Client.	PCPS V1.0
PCPS-RMC-013	The PoC Service Infrastructure SHALL be able to filter out the included media content based on PoC Service Provider Policies of the inviting and invited PoC Users and/or setting of Inviting PoC Client and invited PoC Client.	PCPS V1.0
PCPS-RMC-014	The PoC Service Infrastructure MAY accept or reject the request with the included media content based on Service Provider Policies.	PCPS V1.0
PCPS-RMC-015	Settings by the PoC Service Infrastructure SHALL have precedence over settings by PoC Clients.	PCPS V1.0
PCPS-RMC-016	It SHALL be possible to charge the Inviting PoC Client and the Invited PoC Client for Media in Requests based on PoC Service Providers charging model.	PCPS V1.0

Table 11: Requests with Media Contents

6.1.9.2 Invited Parties Identity Information

This section contains the high level requirements for Invited Party Identity Information of the PCPS Service Enabler.

In the case of an Ad-hoc PoC Group Session establishment, a PoC User can include the identities of all the other invited PoC Users in the invitation sent to each individual PoC User invited to that PoC Session. The invited PoC User can use this information, when deciding whether to participate in the PoC Session or not.

Label	Description	PCPS Release
Conditionality		
PCPS-IPI-001	The PoC Service Infrastructure SHALL support the invited parties identity information functionality in regions where this functionality is not restricted due to regulations.	PCPS V1.0
PCPS-IPI-002	The PoC Client MAY support the invited parties identity information functionality.	PCPS V1.0
Functionality		

PCPS-IPI-003	An inviting PoC User MAY indicate each PoC Addresses of all the invited PoC Users in the invitation to an Ad-hoc PoC Group Session to be presented to, or hidden from, the other invited PoC Users.	PCPS V1.0
PCPS-IPI-004	The originating PoC Server SHALL send PoC Addresses of all invited PoC Users to all terminating PoC Servers with the indication of each PoC Address of all the invited PoC Users to be presented to, or hidden from, the other invited PoC Users. The default setting is to make the PoC Address of the invited PoC Users be hidden. **Informational Note:** If the indication is not included in an invitation, the originating PoC Server sets the indication based on the settings.	PCPS V1.0
PCPS-IPI-005	The terminating PoC Server MAY, according to the settings of the PoC Service Provider policy, remove the received invited party identity information.	PCPS V1.0
PCPS-IPI-006	In case one or more of the invited PoC Users identities have been expressed as anonymous: • The originating PoC Server SHALL inform all terminating PoC Server(s) of their anonymity by including an indication with their PoC User Identity. • The terminating PoC Server SHALL indicate in the invitation to the invited PoC User, the total number of anonymous PoC Users invited to the PoC Session. • The terminating PoC Server SHALL NOT send the PoC User Addresses of any PoC User indicated as anonymous by the originating PoC Server, in the invitation to the invited PoC User.	PCPS V1.0

Table 12: Invited Parties Identification Information

6.1.9.3 Incoming Media Barring

This section contains the high level requirements for Incoming Media Barring of the PCPS Service Enabler.

Incoming Media Barring is supported when the receiving PoC User does not want to receive certain Media at a certain moment. "Media" or "Media Type" in this subclause means those described in section [6.1.8 Additional Media Types]. A PoC User can require the barring without interfering with the conversation and Media sharing within the rest of the PoC Group. Incoming Media Barring is divided into Incoming Media Content Barring feature and Incoming Media Stream Barring feature.

Incoming Media Content Barring feature is supported when the receiving PoC User does not want to receive certain Media Content in PoC Session invitation and Group Advertisement requests. The PoC Subscriber or the authorized PoC User can activate a setting for not receiving certain Media Content.

Incoming Media Stream Barring feature is supported when the receiving PoC User does not want to receive certain Media Content in a Media flow in PoC Session invitation requests and during ongoing PoC Sessions. The PoC Subscriber or the authorized PoC User can activate a setting for not receiving certain Media Types of a Media flow.

Label	Description	PCPS Release
Conditionality		
PCPS-IMB-001	The PoC Client MAY support Incoming Media Content Barring.	PCPS V1.0
PCPS-IMB-002	The PoC Client MAY support Incoming Media Stream Barring.	PCPS V1.0
PCPS-IMB-003	The PoC Service Infrastructure SHOULD support Incoming Media Content Barring.	PCPS V1.0

PCPS-IMB-004	The PoC Service Infrastructure SHOULD support Incoming Media Stream Barring.	PCPS V1.0
Functionality		
PCPS-IMB-005	The PoC Client MAY support separate Incoming Media Content Barring for each Media Type.	PCPS V1.0
PCPS-IMB-006	The PoC Client MAY support separate Incoming Media Stream Barring for each Media Type.	PCPS V1.0
PCPS-IMB-007	The PoC Client MAY support different Access Control for each Media Type. The Access Control for Incoming Media Content Barring MAY be based on the following optional conditions: • PoC Session attributes (e.g. Media Type). • PoC User attributes (e.g. Inviting PoC User PoC Address). **Informational Note:** The above list is not an exhaustive list of conditions.	PCPS V1.0
PCPS-IMB-008	The PoC Client MAY support different Access Control for each Media Type. The Access Control for Incoming Media Stream Barring MAY be based on the following optional conditions: • PoC Session attributes (e.g. QoE, Media Type). • PoC User attributes (e.g. Inviting PoC User PoC Address). **Informational Note:** The above list is not an exhaustive list of conditions.	PCPS V1.0
PCPS-IMB-009	The PoC Service Infrastructure SHALL support separate Incoming Media Content Barring for each Media Type.	PCPS V1.0
PCPS-IMB-010	The PoC Service Infrastructure SHALL support separate Incoming Media Stream Barring for each Media Type.	PCPS V1.0
PCPS-IMB-011	The PoC Service Infrastructure SHALL use the Answer Mode according to the PoC Service Settings the same way as specified in section 6.16 PoC Answer Mode.	PCPS V1.0
PCPS-IMB-012	The PoC Service Infrastructure SHALL use different Access Control for each Media Type, if configured by the PoC Client.	PCPS V1.0

Table 13: Incoming Media Barring

6.1.9.4 Incoming Condition Based PoC Session Barring

This section contains the high level requirements for Incoming Condition Based Session Barring of the PCPS Service Enabler.

In case a PoC Subscriber or an authorized PoC User does not want to be invited to new PoC Sessions under certain barring conditions, the PoC Subscriber or the authorized PoC User can activate a setting to conditionally reject new incoming PoC Sessions.

Label	Description	PCPS Release
Conditionality		
PCPS-ISB-001	The PoC Client MAY support Incoming Condition Based PoC Session Barring.	PCPS V1.0
PCPS-ISB-002	The PoC Service Infrastructure SHOULD support Incoming Condition Based PoC Session Barring.	PCPS V1.0
Functionality		

PCPS-ISB-003	The PoC Client MAY support that a PoC Subscriber or an authorized PoC User defines the Incoming Condition Based PoC Session Barring conditions. Conditions MAY be based on the following information: • PoC Session attributes (e.g. QoE, Media Types). • PoC User attributes (e.g. particular invited or inviting PoC User address). **Informational Note:** The above list is not an exhaustive list of conditions.	PCPS V1.0
PCPS-ISB-004	The PoC Client MAY support a PoC User to interrogate his Incoming Condition Based PoC Session Barring conditions from the PoC Service Infrastructure.	PCPS V1.0
PCPS-ISB-005	The PoC Service Infrastructure SHALL store the Incoming Condition Based PoC Session Barring conditions according to the PoC Client's request.	PCPS V1.0
PCPS-ISB-006	The PoC Service Infrastructure SHALL provide a PoC User with his Incoming Condition Based PoC Session Barring conditions if requested.	PCPS V1.0
PCPS-ISB-007	The PoC Service Infrastructure SHALL verify the Incoming Condition Based PoC Session Barring conditions defined by an authorized PoC User or a PoC Subscriber, and bar the incoming PoC Session invitation only if the conditions are fulfilled.	PCPS V1.0

Table 14: Incoming Condition Based Session Barring

6.1.9.5 Outgoing Condition Based PoC Session Barring

This section contains the high level requirements for Outgoing Condition Based Session Barring of the PCPS Service Enabler.

In case a PoC Subscriber or an authorized PoC User does not want to join a PoC Session or to setup a PoC Session at all under certain barring conditions, the PoC Subscriber or the authorized PoC User can activate a setting for conditionally not carrying out the join or PoC Session setup.

Label	Description	PCPS Release
Conditionality		
PCPS-OSB-001	The PoC Client MAY support Outgoing Condition Based PoC Session Barring.	PCPS V1.0
PCPS-OSB-002	The PoC Service Infrastructure SHOULD support Outgoing Condition Based PoC Session Barring.	PCPS V1.0
Functionality		
PCPS-OSB-003	The PoC Client MAY support that a PoC Subscriber or an authorized PoC User defines the Outgoing Condition Based PoC Session Barring conditions. Conditions MAY be based on the following information: • PoC Session attributes (e.g. QoE, Media Types) • PoC User attributes (e.g., particular invited PoC User address, country or the region in which the inviting PoC User's Home PoC Network is located, geographical location of invited or inviting PoC Users). **Informational Note:** Country or region information may be limited by the functionality provided by the underlying networks. The above list is not an exhaustive list of conditions.	PCPS V1.0

PCPS-OSB-004	The PoC Client MAY support a PoC User to interrogate his Outgoing Condition Based PoC Session Barring conditions from the PoC Service Infrastructure.	PCPS V1.0
PCPS-OSB-005	The PoC Service Infrastructure SHALL store the Outgoing Condition Based PoC Session Barring conditions according to the PoC Client's request.	PCPS V1.0
PCPS-OSB-006	The PoC Service Infrastructure SHALL provide a PoC User with his Outgoing Condition Based PoC Session Barring conditions if requested.	PCPS V1.0
PCPS-OSB-007	The PoC Service Infrastructure SHALL verify the Outgoing Condition Based PoC Session Barring conditions defined by an authorized PoC User or a PoC Subscriber and bar the outgoing PoC Session invitation only if the conditions are fulfilled.	PCPS V1.0
PCPS-OSB-008	The PoC Service Infrastructure SHALL notify an inviting PoC User that an outgoing PoC Session invitation has been barred when it has been done due to the Outgoing Condition Based PoC Session Barring conditions defined by the PoC Subscriber or the authorized PoC User.	PCPS V1.0

Table 15: Outgoing Condition Based Session Barring

6.1.9.6 Automatic Notification of Limited Participating Information

This section contains the high level requirements for the Automatic Notification of Limited Participating Information of the PCPS Service Enabler.

In case of PoC Group Session, especially in case of large PoC Groups, the amount of data exchanged due to each Participant subscribing to a conference event package and receiving the consequent notifications may become substantially high. From the usability point of view, even though the Limited Participant Information could be sufficient for many cases, the conventional mechanisms may result in providing the full information to the Participants of the PoC Session. From the PoC Network traffic point of view, this may cause unnecessary high load and also cause deterioration of Media quality in a PoC Session. To overcome this issue, the PoC Service may provide functionality of automatic notification of Limited Participant Information as an alternative to the full conference information delivery.

Label	Description	PCPS Release
Conditionality		
PCPS-ANP-001	The PoC Service Infrastructure MAY support the automatic notification of Limited Participating Information functionality if capable of receiving full Participating Information.	PCPS V1.0
PCPS-ANP-002	The PoC Client MAY support the automatic notification of limited participating information functionality.	PCPS V1.0
Functionality		
PCPS-ANP-003	PoC Service SHALL be able to provide Limited Participant Information (i.e., PoC User's PoC Address and joining alert) automatically to the Participant(s) who already joined using the existing PoC Session during the PoC Group Session establishment phase or on-going PoC Session, if authorized by PoC Group policy.	PCPS V1.0
PCPS-ANP-004	Using this capability, the PoC Session Owner SHOULD be able to receive another PoC User's Participant Information (e.g., when each PoC User joins, leaves, or rejects an invitation).	PCPS V1.0
PCPS-ANP-005	Using this capability, the Participant(s) SHOULD be able to receive another PoC User's Participant Information subsequently (e.g., when each PoC User joins).	PCPS V1.0

Table 16: Automatic Notification of Limited Participating Information

6.1.9.7 Rejection of Session Establishment Due to Hidden Identity of an Inviting User

This section contains the high level requirements for the Rejection of Session Establishment Due to Hidden Identity of an Inviting User of the PCPS Service Enabler.

The PoC Service Infrastructure rejects PoC Session establishment initiated by an Inviting PoC Client because of the hidden identity based on invited PoC User's local policies and preferences and indicates to that PoC Client of this failure.

Label	Description	PCPS Release
Conditionality		
PCPS-RSH-001	The PoC Service Infrastructure SHALL be able to reject PoC Session establishment initiated by an inviting PoC User whose identity is hidden based on local policies and preferences of invited PoC Users.	PCPS V1.0
PCPS-RSH-002	The PoC Client SHOULD support the indication of PoC Session establishment failure due to identity hiding functionality.	PCPS V1.0
Functionality		
PCPS-RSH-003	Invited PoC User's PoC Network SHALL be able to reject PoC Session establishment initiated by an inviting PoC User whose identity is hidden based on local policies and preferences of the invited PoC User.	PCPS V1.0
PCPS-RSH-004	Invited PoC User's PoC Network SHALL be able to indicate the inviting PoC User that the PoC Session establishment fails due to the inviting PoC User's hidden PoC Address.	PCPS V1.0

Table 17: Rejection of Session Establishment Due to Hidden Identity of an Inviting User

6.1.9.8 Ad-hoc PoC Group Session Re-initiation

This section contains the high level requirements for the Ad-hoc Group Session Re-initiation of the PCPS Service Enabler.

When a PoC Client attempts to re-join an Ad-hoc PoC Group Session, which has already been released, the PoC Service Infrastructure provides the re-joining PoC User with a list of the Participants of the original Ad-hoc PoC Group Session.

Label	Description	PCPS Release
Conditionality		
PCPS-ASR-001	The PoC Service Infrastructure MAY support the Ad-hoc Group Session re-initiation functionality.	PCPS V1.0
PCPS-ASR-002	The PoC Client MAY support the Ad-hoc Group Session re-initiation functionality.	PCPS V1.0
Functionality		
PCPS-ASR-003	Upon receiving a re-join request for an already released Ad-hoc PoC Group Session the PoC Service Infrastructure SHOULD indicate the cached Participants of the Ad-hoc PoC Group Session in the failure response of the re-join request. **Informational Note:** The Participant cache timeout is according to the PoC Server local policy.	PCPS V1.0
PCPS-ASR-004	Upon receiving the failure response of the re-join request containing a list of PoC Users, the PoC Client MAY invite the indicated PoC Users to a new Ad-hoc PoC Group Session.	PCPS V1.0

Table 18: Ad-hoc Group Session Re-initiation

6.1.10 Enhanced PoC Session Control

6.1.10.1 Full Duplex Call Follow-on Proceed

This section contains the high level requirements for the Full Duplex Call Follow-on Proceed feature of the PCPS Service Enabler.

This feature enables changing a Half Duplex voice PoC Session into a Full Duplex Circuit switched (CS) or VoIP call.

Label	Description	PCPS Release
Conditionality		
PCPS-FDF-001	The PoC Service Infrastructure MAY support the Full Duplex call follow-on proceed functionality.	PCPS V1.0
PCPS-FDF-002	The PoC Client MAY support the Full Duplex call follow-on proceed functionality.	PCPS V1.0
Functionality		
PCPS-FDF-003	The PoC Service MAY support for a PoC Client to leave a 1-1 or 1-many PoC Session with an indication to the peer PoC Clients that the PoC User intends to set up a Full Duplex voice call among the peer entities immediately after release of the PoC Session. **Informational Note:** Full duplex voice call could either be a SIP voice call or a circuit switched (CS) call. User Equipment may support e.g., automatic initiation and answer of this kind of call.	PCPS V1.0
PCPS-FDF-004	The PoC Service MAY support for a PoC Client to leave a 1-1 or 1-many PoC Session with an indication to a subset of PoC Clients that the PoC User intends to set up a Full Duplex voice call among a subset peer entities immediately after release of the PoC Session. **Informational Note:** Full Duplex voice call could either be a SIP voice call or a circuit switched (CS) call. User Equipment may support e.g., automatic initiation and answer of this kind of call.	PCPS V1.0
PCPS-FDF-005	The PoC Service MAY support for a PoC User to include a target address (e.g., SIP URI or E.164 number) to the indication, so that the Full Duplex call can be set up to that target address.	PCPS V1.0

Table 19: Full Duplex Follow-on Proceed

6.1.10.2 Expelling Participant(s) from a PoC Session

This section contains the high level requirements for the expelling participants from a PoC Session feature of the PCPS Service Enabler.

The PoC Service supports the functionality to expel the selected Participant(s) from a PoC Session.

Label	Description	PCPS Release
Conditionality		
PCPS-EPS-001	The PoC Service Infrastructure SHALL support expelling participant(s) from a PoC Session functionality.	PCPS V1.0
PCPS-EPS-002	The PoC Client MAY support initiation of the expelling participant(s) from a PoC Session functionality.	PCPS V1.0
Functionality		
PCPS-EPS-003	It SHALL be possible to specify expel rights for the PoC Group.	PCPS V1.0
PCPS-EPS-004	The PoC Group Administrator of Pre-arranged and Chat PoC Groups SHALL be able to assign expelling rights to other PoC User(s) in the PoC Group.	PCPS V1.0

PCPS-EPS-005	A Participant, who has been granted expel rights, SHALL be able to expel other Participant(s) from a PoC Group Session (incl. all Participants at a time), and an expelled PoC User SHALL not be able to rejoin the PoC Session which the PoC User has been expelled from for a period or during the entire PoC Session.	PCPS V1.0
PCPS-EPS-006	If expelling is supported, the Ad hoc PoC Group Session initiator SHALL be able to expel any other Participants from an Ad hoc PoC Group Session.	PCPS V1.0

Table 20: Expelling Participant(s) from a PoC Session

6.1.10.3 Group Specific Releasing Rules

This section contains the high level requirements for the Group Specific Releasing Rules feature of the PCPS Service Enabler.

In addition to existing PoC Session releasing rules, the PoC Session release can be made according to the PoC Group specific release rules.

Label	Description	PCPS Release
Conditionality		
PCPS-GRR-001	The PoC Service Infrastructure MAY support PoC Group specific releasing rules.	PCPS V1.0
PCPS-GRR-002	The PoC Client MAY support PoC Group specific releasing rules.	PCPS V1.0
Functionality		
PCPS-GRR-003	If PoC Group specific releasing rules are supported, it SHALL be possible to specify release rules for the PoC Group.	PCPS V1.0
PCPS-GRR-004	If PoC Group specific releasing rules are supported, it SHALL be possible to define for a PoC Group that the PoC Session is released when one or more of the following conditions are fulfilled (and in this case the general PoC Session release policy specified in this document is not used): • The PoC Session initiator leaves the PoC Session • A defined Participant leaves the PoC Session • The number of Participants is less than a certain value • The PoC Session allocated time has expired • When only machines are still in the PoC Session • When PoC Speech is inactive for a specified time • When all Media types are inactive for a specified time.	PCPS V1.0

Table 21: Group Specific Releasing Rules

6.1.10.4 PoC Session Control for Crisis Handling

This section contains the high level requirements for the PoC Session Control for Crisis Handling feature of the PCPS Service Enabler.

The PoC Service can optionally support special PoC Sessions with a different set of characteristics to be used for Crisis Handling.

Label	Description	PCPS Release
Conditionality		

PCPS-SCC-001	The PoC Service Infrastructure MAY support the PoC Session control for crisis handling functionality.	PCPS V1.0
PCPS-SCC-002	The PoC Client MAY support PoC Session control for crises handling functionality.	PCPS V1.0
Functionality		
PCPS-SCC-003	The PoC Service Infrastructure SHALL differentiate the Crisis Handling Request from other requests.	PCPS V1.0
PCPS-SCC-004	The PoC Service Infrastructure SHALL validate the Crisis Handling Request (e.g., authenticate the source) and authorize the PoC Session initiation for crisis handling.	PCPS V1.0
PCPS-SCC-005	The PoC Service Infrastructure SHALL enforce high enough priority to be able to serve the PoC Session initiated with Crisis Handling Request	PCPS V1.0
PCPS-SCC-006	The PoC Service Infrastructure SHALL be able to serve the PoC Session initiated with Crisis Handling Request by using an appropriate access network resource reservation schema.	PCPS V1.0
PCPS-SCC-007	Based on the crisis information received in the Crisis Handling Request the PoC Service Infrastructure MAY perform pre-defined procedures for PoC Session. **Informational Note:** Examples are: a) Sending out PoC Session invitation to one or more Pre-arranged PoC Group(s) b) Invoking CBUS based on conditions (e.g., location, presence status information) to determine the Dynamic PoC Groups to be invited c) Distributing pre-recorded data (e.g., canned voice) d) Distributing data received in the received Crisis Handling Request (e.g., images), or e) Invoking other services to complement crisis related data to be distributed (e.g., location information)	PCPS V1.0
PCPS-SCC-008	The PoC Service Infrastructure MAY apply a pre-defined set of specific PoC Service Settings to the PoC Session for Crisis Handling (e.g., characterized by PoC Session priority, Manual Answer Override to invited PoC Users, etc.).	PCPS V1.0
PCPS-SCC-009	The PoC Service Infrastructure SHALL be able to override the current PoC Service Settings to forward PoC Session invitation with Crisis Handling Request from an PoC User with the appropriate authority according to applicable regulations.	PCPS V1.0
PCPS-SCC-010	The PoC Service Infrastructure SHALL be able to create PoC Groups to which PoC Users are added dynamically at the crisis service invocation. Only PoC Service Provider can create such a special crisis PoC Group to which an authorized user is assigned. Only authorized PoC User can invoke PoC Sessions with Crisis Handling Request through his assigned Crisis PoC Group.	PCPS V1.0

Table 22: PoC Session Control for Crisis Handling

6.1.11 Media Burst Control

6.1.11.1 Media Burst Control Enhancements General

This section contains the high level requirements for the Media Burst Control Enhancements feature of the PCPS Service Enabler.

The PoC Service Enabler supports enhancements to PoC Media Burst Control in addition to basic Floor Control handling in section [6.1.5 Communication Phase Requirements] of this document.

Label	Description	PCPS Release
Conditionality		
PCPS-MBC-001	The PoC Service Infrastructure SHALL support the PoC Media Burst Control enhancement features.	PCPS V1.0
PCPS-MBC-002	The PoC Client MAY support the Media Burst Control enhancements functionality.	PCPS V1.0
Functionality		
PCPS-MBC-003	If the Media Burst Control is applicable for the Media Type, the PoC Network elements SHALL support capability for an independent Media Burst Control for each Media in a PoC Session. Media Burst Control SHALL be applicable to Continuous Media and SHOULD be applicable to the Discrete Media involved in a PoC Session. **Informational Note:** Discrete Media types should only use Media Burst Control, if it is essential for the application using PoC Service Enabler.	PCPS V1.0
PCPS-MBC-004	If the Media Burst Control is applicable for the Media Type the PoC Service Infrastructure SHALL support and the PoC Client MAY support capability for one Media Burst Control for multiple Media in a PoC Session.	PCPS V1.0
PCPS-MBC-005	The PoC Service Provider MAY support providing several Media Burst Control schemes (e.g., pre-granted Right-to-Speak).	PCPS V1.0

Table 23: Media Burst Control Enhancements - General

6.1.11.2 Pre-granted Media Burst Control

This section contains the high level requirements for Pre-granted Media Burst Control of the PCPS Service Enabler.

PoC Service can support the Pre-granted Media Burst Control for reducing the delay to Right-to-Speak.

Label	Description	PCPS Release
Conditionality		
PCPS-PGM-001	The PoC Service Infrastructure MAY support the pre-granted Media Burst Control feature.	PCPS V1.0
PCPS-PGM-002	The PoC Client MAY support the pre-granted Media Burst Control feature.	PCPS V1.0
Functionality		
PCPS-PGM-003	The Media Burst MAY be pre-granted to a PoC User before the PoC User has requested the Media Burst.	PCPS V1.0
PCPS-PGM-004	The pre-granted Media Burst Control MAY be given to one or many PoC User(s) in a PoC Session. The number of PoC Users and which PoC User(s) that are given pre-granted Media Burst is up to local policy in the PoC Server.	PCPS V1.0
PCPS-PGM-005	If pre-granted Media Burst Control is supported, the pre-granted Media Burst SHOULD expire if not used during a certain time period (to be configured by the PoC Service Provider).	PCPS V1.0
PCPS-PGM-006	If pre-granted Media Burst Control is supported, the PoC Client SHALL get confirmation from the PoC User before encoding and sending the Media.	PCPS V1.0

Table 24: Pre-granted Media Burst Control

6.1.11.3 Advanced Revocation Alert

This section contains the high level requirements for Advanced Revocation Alert of the PCPS Service Enabler.

Advanced revocation alert enables the PoC Client to provide the PoC User with an advanced alert so that the PoC User knows the transmit time is about to finish.

Label	Description	PCPS Release
Conditionality		
PCPS-ARA-001	The PoC Service Infrastructure SHOULD support the advanced revocation alert functionality.	PCPS V1.0
PCPS-ARA-002	The PoC Client MAY support the advanced revocation alert functionality.	PCPS V1.0
Functionality		
PCPS-ARA-003	The PoC Client SHALL provide the PoC User with an advanced alert so that the PoC User knows the transmit time is about to finish.	PCPS V1.0

Table 25: Advanced Revocation Alert

6.1.11.4 Stop Transmit Time Notification for Advanced Revocation Alert

This section contains the high level requirements for Stop Transmit Time Notification for Advanced Revocation Alert of the PCPS Service Enabler.

A PoC Client may be notified before hand about when its video Media Burst permission is expected to be revoked. This information is needed for the PoC Client to be able to generate an advanced revocation alert for the PoC User before or when starting video transmission.

Label	Description	PCPS Release
Conditionality		
PCPS-SRA-001	The PoC Service Infrastructure SHOULD support the transmit time notification for advanced revocation alert functionality.	PCPS V1.0
PCPS-SRA-002	The PoC Client SHOULD support the transmit time notification for advanced revocation alert functionality.	PCPS V1.0
Functionality		
PCPS-SRA-003	In addition to what is specified for voice Media the PoC Server SHALL be able to send a notification of the transmit time of a video burst to the transmitting PoC Client before transmission.	PCPS V1.0

Table 26: Stop Transmit Time for Advanced Revocation Alert

6.1.11.5 Expanding Duration of Media Burst Transmitting

This section contains the high level requirements for Expanding Duration of Media Burst Transmitting of the PCPS Service Enabler.

If the PoC Server supports pre-emptive Media Burst priority or Media Burst queuing function, the following requirements apply.

Label	Description	PCPS Release
Conditionality		
PCPS-EDM-001	The PoC Service Infrastructure MAY support the expanding duration of speaking feature.	PCPS V1.0

PCPS-EDM-002	The PoC Client MAY support the expanding duration of Media Burst transmitting feature.	PCPS V1.0
Functionality		
PCPS-EDM-003	The PoC Service Infrastructure MAY be able to grant a certain Media Burst duration to the PoC Client depending on the requested Media Burst duration received from the PoC Client.	PCPS V1.0
PCPS-EDM-004	The PoC Client MAY be able to include a requested Media Burst duration in the Media Burst Request when the PoC Client sends Media Burst Request to the PoC Server performing the Controlling Function.	PCPS V1.0

Table 27: Expanding Duration for Media Burst Transmitting

6.1.11.6 Moderated PoC Groups

This section contains the high level requirements of the Moderated PoC Groups feature for the PCPS Service Enabler.

Moderated PoC Groups is a functionality of PCPS enabler, which supports an authorized Participant of a PoC Group Session to be a moderator of the Session. Moderator in a PoC Session has an ability to control the Media Burst Control entity of the PoC Session. Moderator is typically the owner of the Pre-arranged PoC Group, but she/he may be able to delegate the role of moderator to other PoC User, that is a Participant in a PoC Session.

Label	Description	PCPS Release
Conditionality		
PCPS-MGS-001	The PoC Service Infrastructure MAY support the moderated PoC Groups functionality.	PCPS V1.0
PCPS-MGS-002	The PoC Client MAY support the moderated PoC Groups functionality.	PCPS V1.0
Functionality		
PCPS-MGS-003	Member of a Pre-arranged PoC Group or Chat PoC Group MAY be authorized to adopt the role of moderator.	PCPS V1.0
PCPS-MGS-004	A PoC Group Member adopting the role of moderator during a PoC Session SHALL be able to assign the role of the moderator to any other PoC Group Member authorized to take the role as the moderator during a PoC Session.	PCPS V1.0
PCPS-MGS-005	Moderator, e.g., a PoC Dispatcher, SHALL be able to request permission to send the Media Burst on behalf of another PoC User, e.g., a PoC Fleet Member. **Informational Note:** A PoC V1.0 Client may not be able to fulfill the function of sending a Media Burst when permission to send the Media Burst has been requested by a Moderator.	PCPS V1.0
PCPS-MGS-006	PoC Client acting as a moderator, e.g., a PoC Dispatcher SHALL be able to grant or deny the request from another PoC Client, e.g., a PoC Fleet Member, for permission to send the Media Burst.	PCPS V1.0
PCPS-MGS-007	A PoC Client participating in a Moderated PoC Group e.g., a PoC Fleet Member, MAY indicate the reason for requesting permission to send Media to the Moderator in a text string included as part of the request.	PCPS V1.0

Table 28: Moderated PoC Groups

6.1.12 Multicast

This section contains the high level requirements of the Multicast / Broadcast feature for the PCPS Service Enabler.

The multicast applies to PoC Group Sessions and is optional for PCPS enabler. This feature requires multicast/broadcast capabilities in the underlying radio access network.

Label	Description	PCPS Release
Conditionality		
PCPS-MUC-001	The PoC Service Infrastructure MAY support the multicast feature for PoC Group Sessions.	PCPS V1.0
PCPS-MUC-002	The PoC Client MAY support the multicast feature.	PCPS V1.0
Functionality		
PCPS-MUC-003	The Service Provider Policy and/or PoC User subscription SHALL determine if a given Pre-arranged Session or Chat PoC Group Session or Ad-hoc PoC Group Session is able to utilize multicast/broadcast capability for Media.	PCPS V1.0
PCPS-MUC-004	A multicast bearer enabled PoC User accessing PoC Service via a multicast/broadcast access network SHALL be able to establish a PoC Session that uses multicast/broadcast capabilities for the transport of downlink Media.	PCPS V1.0
PCPS-MUC-005	The PoC Service SHALL provide capability to include PoC Group Members that are not multicast/broadcast capable through normal PoC procedures.	PCPS V1.0

Table 29: Multicast

6.1.13 Performance General Objectives

This section contains the high level requirements with respect to Performance of the PCPS Service Enabler.

The first step for the service providers to offer a service with a satisfactory Quality of Experience (QoE) is to identify the underlying factors that impact QoE. QoE itself is highly subjective and very difficult to quantify and validate; whereas the factors impacting on QoE can be objectively measured and validated against pre-determined target values.

For PCPS Service Enabler, the following service characteristics are identified as the factors impacting QoE:

QoE1, Right-to-Speak (RtS) response times during PoC session establishment: The duration between the times a PoC User initiates a PoC session and when he receives a Right-to-Speak indication.

QoE2, Start-to-Speak (StS) response time after PoC session establishment: In a PoC session (1-to-1 or 1-to-many), the duration between the times a PoC Participant initiates a floor request (i.e. permission to talk) and when he receives a Start-to-Speak indication (or queuing indication or denial).

QoE3, End-to-end channel delay: The duration between the times one PoC Participant, who has the right to speak, starts to speak and when another PoC Participant starts to hear the speech (in case of 1-to-many sessions, each of the PoC Participant's delay to another participant in the session must be measured).

QoE4, Voice quality: The following characteristics of the session directly impact the quality of the PoC speech:

- End-to-end channel delay
- Transmit and receive levels (loss plan as per telephony)
- Codec characteristics
- RF channel conditions
- Echo does not impact voice quality in PoC because of an absence of echo path in half-duplex operation.

QoE5, Turn-around-Time (TaT): TaT refers to the duration when a PoC Participant stops talking and releases the floor to until he can hear another PoC Participant beginning to speak. TaT comprises system delay times plus the response/reaction time from another PoC Participant.

The requirements in this section refer to the case when a PoC Session has been established among the PoC Participants and is ready for voice communication.

The PCPS V1.0 Service Enabler is developed with the intention to duplicate the overall quality of experience when compared with PoC V2.1 and to allow the PoC Service Provider to provide the PoC Service according to PoC User's expectations by making a better use of network resources and capabilities, including the underlying network, to best adapt to each customer's needs.

As there is a strong dependence on underlying network performance enhancements, it has to be understood that the achievement of these recommended objectives may not be under control of the PoC Service Enabler on its own. These recommended objectives are not intended to be included in the scope of OMA PoC Service Enabler test specifications and conformance testing, as described in [OMA PoC ETS CON 1.0], [OMA PoC ETS INT 2.0], and [OMA PoC ETS INT 2.1].

Informational Note: The term 'basic PoC Service Enabler functionality' refers to simple functionalities that do not imply complex procedures in the PoC Service Infrastructure (e.g. 1-1 PoC Session, and 1-many PoC Sessions involving non-Dynamic PoC Group).

Performance numbers will be based on the 3GPP LTE performance as defined by 3GPP MCPTT SA1. For this reason values in this table are marked [TBD].

Label	Description	PCPS Release
Conditionality		
PCPS-PER-001	The PoC Service Infrastructure SHALL support performance objectives.	PCPS V1.0
PCPS-PER-002	The PoC Client SHALL support performance objectives.	PCPS V1.0
Functionality		
Right-to-Speak Response times During PoC Session Establishment, QoE1		
PCPS-PER-003	The duration between the times the inviting PoC User initiates the PoC Session and when he receives a Right-to-Speak (RtS) indication SHOULD typically be less than [TBD], in case PoC Service Infrastructure provides early Right-to-Speak indication and the invited PoC User is on Automatic Answer Mode. **Informational Note:** During PoC Session establishment, the inviting user receives Right-to-Speak (RtS) indication after certain time depending on the Answer Mode setting of the invited PoC User. If automatic answer is used, the Right-to-Speak indication can be given to the inviting PoC User before the invited PoC User is reached. The enhancements for the Right-to-Speak time are foreseen to be related to an optimized use of compression strategies (i.e. SigComp). Other required enhancements fall in the scope of the underlying network, and therefore, the achievement of this recommendation may depend on them.	PCPS V1.0
PCPS-PER-004	If the invited PoC User answers manually, then the inviting PoC User SHOULD typically receive the Right-to-Speak (RtS) indication in less than [TBD] after the invited PoC User manually accepts the PoC Session invitation. **Informational Note:** If Manual Answer Mode is used, the invited PoC user has to accept the PoC Session invitation before the Right-to-Speak indication is given to the inviting PoC user. The enhancements of the Right-to-Speak time are foreseen to be only related to an optimized use of compression strategies (i.e. SigComp). Other required enhancements completely fall in the scope of the underlying network and, therefore, the achievement of this recommendation may strongly depend on them.	PCPS V1.0
Start-to-Speak Response time in an Established PoC Session, QoE2		

PCPS-PER-005	When a PoC User makes a request to talk in the PoC Session and his request is not queued, the Start-to-Speak (StS) time SHOULD typically be less than [TBD]. **Informational Note:** Start-to-Speak (StS) refers to the response period between the times the PoC User requests talk permission to when he receives permission to start speaking in an established PoC Session. From the PoC Service Enabler, the enhancements of to the StS time are foreseen to depend on the use of pre-granted Media Burst Control and potential buffering techniques. Other required enhancements completely fall in the scope of the underlying network and, therefore, the achievement of this recommendation may strongly depend on them.	PCPS V1.0
PCPS-PER-006	If the PoC User's Request-to-Speak is queued due to other PoC Users speaking or having already requested to speak, he SHOULD typically receive an indication within [TBD] that his request has been queued.	PCPS V1.0
PCPS-PER-007	If the PoC User's request is rejected for any reason, he SHOULD typically receive an indication within [TBD] that his request has been rejected.	PCPS V1.0
End-to-end Channel Delay, QoE3		
PCPS-PER-008	The voice delay time (duration between when voice is spoken by a sending PoC User until it is heard by the invited PoC User) SHOULD typically be no more than [TBD] during the PoC Session.	PCPS V1.0
PCPS-PER-009	For the first talk-burst in a PoC Session set-up the voice delay SHOULD typically be no more than [TBD], in case early indication is given.	PCPS V1.0
PCPS-PER-010	The Media delay between the time the Media is sent by the originating User and the time it is displayed by the destination User SHALL depend on the QoS applied for the Media transmission in the PoC Session, more concretely (following the QoS classes specified in [3GPP TS 23.107]): • For Interactive traffic class: the end-to-end delay SHOULD typically be less than [TBD]. • For Streaming traffic class: the end-to-end delay SHOULD typically be less than [TBD]. • For Conversational traffic class: the end-to-end delay SHOULD typically be less than [TBD].	PCPS V1.0
PCPS-PER-011	Different delay requirements MAY apply for different Media Types of the same PoC Session (e.g., different QoS assigned to each Media Type of the PoC Session). The QoS to be applied for each Media Type of the PoC Session SHALL be directly determined from the QoE profile applied for the PoC Session and based on the Service Provider Policy.	PCPS V1.0
Voice Quality Requirements, QoE4		
PCPS-PER-012	The PoC Session voice quality SHOULD typically meet the following limit: `MOS` >= 3 under nominal network conditions.	PCPS V1.0
Turn-around-Time (TaT), QoE5		

PCPS-PER-013	To allow a fluent communication between PoC Users, Turn-around-Time (TaT) response time SHALL be [TBD].	PCPS V1.0
PCPS-PER-014	In case another PoC User replies immediately (i.e. within [TBD]), the Turn-around-Time (TaT) SHOULD typically be no longer than [TBD].	PCPS V1.0
General Performance Considerations		
PCPS-PER-015	When the Participants of a PoC Session are distributed across multiple PoC Networks, the PoC Server MAY support the optimization to reduce Media latencies and to enhance efficiency of reserved lines between the PoC Networks.	PCPS V1.0
PCPS-PER-016	It SHOULD be possible for the PoC Service Infrastructure to, within [TBD], detect that a Participant in a PoC Session is no longer connected to the PoC Session e.g. when the PoC Client is out of range, if the capability is supported by the PoC Client.	PCPS V1.0
PCPS-PER-017	The PoC Client MAY convey information to the PoC Service Infrastructure that characterizes the Media processing throughput capabilities of the PoC Client. **Informational Note:** This is for User Equipment to indicate its own data rate for receiving and processing Media, and has nothing to do with User Plane Adaptation.	PCPS V1.0
PCPS-PER-018	The PoC V2.0 Service Enabler SHALL support User Equipments that have limited memory capabilities. Therefore, the PoC Service Infrastructure SHALL be able to convey an appropriate Media throughput to the PoC Client in order to avoid buffer overrun at the client side.	PCPS V1.0

Table 30: Performance Objectives - General

6.1.14 Quality of Experience (QoE)

This section contains the high level requirements with respect to Quality of Experience of the PCPS enabler.

The objective of this feature is to provide a wide range of quality of service for PoC Users according to service subscription. Among other things, PoC Servers distinguish PoC Sessions from one another based on the QoE assigned to the PoC Sessions, providing better service for higher priority PoC Sessions.

Label	Description	PCPS Release
Conditionality		
PCPS-QOE-001	The PoC Service Infrastructure SHALL support QoE.	PCPS V1.0
PCPS-QOE-002	The PoC Client SHOULD support QoE.	PCPS V1.0
Functionality		

PCPS-QOE-003	The PoC Service Provider SHALL be able to define a QoE profile(s) for each PoC Subscriber. As a minimum, the following profiles (from lower to higher end PoC User experience) SHALL be defined: • Basic • Premium • Professional. In addition, the following QoE profile MAY be defined: • Official Government Use (this is a profile with multiple levels of priority access intended for national security and emergency preparedness purposes; subject to applicable regulations, when this profile is implemented, it SHALL take precedence over all other QoE profiles)"	PCPS V1.0
PCPS-QOE-004	The PoC Service Provider SHOULD be able to use QoE profiles as a way to define a mapping between different types of quality of service expected by the PoC Users at application level and different profiles of performance criteria to be realized at underlying network level. These performance criteria SHOULD consider the following on a profile basis: • QoS to be provided for the PoC Sessions and each of Media Types in the PoC Session, and/or • PoC Session Priority. And any mapping mechanism SHALL depend on the concrete underlying network capabilities (i.e. QoS framework…) and conditions. **Informational Note:** When the PoC Service Provider has not enabled the use of QoE profiles, the PoC Service Infrastructure ignores received QoE information.	PCPS V1.0
PCPS-QOE-005	The PoC Service Provider SHOULD be able to use QoE profiles to make a better usage of the PoC Network resources and capabilities, and available underlying network.	PCPS V1.0
PCPS-QOE-006	The PoC Group Administrator SHALL be able to define the QoE profile for each PoC Group, according to the Service Provider Policy and PoC Users' subscription.	PCPS V1.0
PCPS-QOE-007	The PoC Service Provider SHALL be able to restrict access to certain PoC Groups to PoC Subscribers having a minimum necessary QoE profile.	PCPS V1.0
PCPS-QOE-008	The PoC Client SHALL be able to indicate the desired QoE profile to be applied on a PoC Session-by-PoC Session basis. When selecting the QoE profile for the PoC Session, the PoC User SHALL be able to choose their subscribed profile and all lower profiles (i.e., with lower QoS characteristics, lower PoC Session Priority, etc). The PoC Client SHALL store in the User Equipment the default settings for the desired QoE profiles to be applied to outgoing PoC Sessions. These settings MAY be configurable via e.g., OMA Device Management.	PCPS V1.0

PCPS-QOE-009	The PoC Server SHALL be able to define the QoE profile applied for the PoC Session at the establishment of the PoC Session, according to policies defined by the PoC Service Provider based on the following parameters: • QoE profile requested by the inviting PoC User • Preferences associated to the PoC User(s) and/or the PoC Group	PCPS V1.0
PCPS-QOE-010	The PoC Server SHOULD indicate to all Participants the actual QoE applied in each PoC Session. The PoC Server SHOULD also indicate to a Participant if the requested QoE is not provided (e.g., if it is unsupported by the PoC Network, or the PoC User is participating in a lower profile PoC Group, etc)	PCPS V1.0
PCPS-QOE-011	The PoC Client SHOULD be able to optimally select the network resources it requests for the transport of voice or Media of the PoC Session based on the QoE profile(s) or any other parameters associated to the PoC User or the PoC Service Provider.	PCPS V1.0
PCPS-QOE-012	PoC Users having Official Government Use QoE subscription SHALL be able to establish PoC Sessions with Official Government Use QoE profile toward any PoC Users, regardless of the subscription of the invited PoC Users.	PCPS V1.0

Table 31: QoE General

6.1.14.1 Prioritization and pre-emption

This section contains the high level requirements with respect to Prioritization and Pre-emption of the PCPS enabler.

The PoC Session Priority associated to a PoC Session determines how the PoC Session is treated under competing situations with other PoC Sessions. In those cases, PoC Sessions with higher PoC Session Priority receive preferred allocation of those network resources controlled, directly or indirectly, by the PoC Server, (e.g., access to the service under load conditions, more bandwidth, faster Media processing at PoC Server, etc).

Pre-emption considers the capability to tear down one or more PoC Sessions when another PoC Session, with a higher PoC Session Priority, needs more resources to be properly established. Policies related to the use of pre-emption might vary between regions.

Informational Note: The following requirements apply to the PoC Server and/or the PoC Client but assume that a prioritization mechanism is available in the underlying access network. As stated above, the prioritization actions to be taken at the access network are derived from the QoE profile and communicated to the underlying network using some mapping mechanism or indication at PoC Session set up.

Label	Description	PCPS Release
Conditionality		
PCPS-QPP-001	The PoC Service Infrastructure MAY support the prioritization and pre-emption functionality.	PCPS V1.0
PCPS-QPP-002	The PoC Client MAY support prioritization and pre-emption functionality.	PCPS V1.0
Functionality		
PCPS-QPP-003	The PoC Session Priority of a PoC Session SHOULD be directly determined from the QoE profile selected for that PoC Session, as defined by the PoC Service Provider	PCPS V1.0
PCPS-QPP-004	The PoC Server SHALL support prioritization of the PoC Sessions	PCPS V1.0
PCPS-QPP-005	Under high load situations at the PoC Server the PoC Server SHOULD prioritise all Media involved in a PoC Session among the Media of other PoC Sessions with lower PoC Session Priority.	PCPS V1.0

PCPS-QPP-006	Under high load situations at the PoC Server, the establishment of PoC Sessions MAY force the pre-emption of other PoC Sessions with lower PoC Session Priority (i.e., PoC Sessions with lower PoC Session Priority are torn down by the PoC Server).	PCPS V1.0
PCPS-QPP-007	Under high load situations at the PoC Server and in case of several simultaneous requests of PoC Sessions associated to the same PoC Session Priority, the PoC Server SHALL proceed with the establishment by order of request.	PCPS V1.0
PCPS-QPP-008	Based on the PoC Service Provider's Policy, the PoC Server SHALL be able to pre-empt ongoing PoC Session(s) of a PoC User when receiving a PoC Session request with a special PoC Session Priority (e.g., Official Government Use) destined to that PoC User.	PCPS V1.0
PCPS-QPP-009	When multiple PoC Sessions are in active, the PoC Client MAY support prioritization of the PoC Sessions (i.e., preferred allocation of resources for PoC Sessions with higher PoC Session Priority).	PCPS V1.0
PCPS-QPP-010	The levels of priority defined in [3GPP TR 22.950] MAY be supported. **Informational Note:** Please refer to Annex A in [3GPP TR 22.950].	PCPS V1.0

Table 32: Prioritization and Preemption

6.1.15 PCPS Interworking Service

This section contains the high level requirements for the Interworking Service of the PCPS enabler.

Informational Note: Since the PCPS enabler is explicitly based on PoC 2.1, compatibility between PCPS V1.0 and PoC 2.1 Systems is naturally presumed. Use of an interworking function between the two systems is not necessary.The PoC Interworking Service provides the means to extend the PoC User experience and reach beyond the OMA defined PoC Service and PoC Network boundaries. This is accomplished by interworking with other networks and systems, while not PoC compliant, may be able to provide a reasonably comparable capability. The interworking service manipulates interactions with these other networks and systems into PoC behaviour to hide the details of the variation from PoC.

For PoC Interworking Service, the focus is limited to: interworking with External P2T Networks to provide PoC interactions between PoC Users and External P2T Network users; providing PoC Users Remote PoC access when not directly connected to a PoC Network.

The thrust of this effort is to minimize the impact on PoC specifications of the accommodation of this interworking capability, both for interconnection with External P2T Networks and for PoC Remote access. The requirements for interworking capability articulated in this specification sub-clause are limited in scope to those aspects of PoC interfaces supporting the export of PoC functions and capabilities beyond PoC Network borders. This means that the interworking service itself, interfaces to External P2T Networks and remote access networks are outside the scope of this OMA Enabler.

PoC Interworking Service does not guarantee that all systems outside the OMA PoC domain will be capable to interworking without enhancements.

Label	Description	PCPS Release
Conditionality		
PCPS-IWF-001	PoC Service Infrastructure MAY utilize the inter-working service to support symmetric communication with PoC Remote Access users and users in External P2T Network.	PCPS V1.0
PCPS-IWF-002	PoC Client MAY support the Inter-working Service for PoC Remote Access Users.	PCPS V1.0
Functionality		

PCPS-IWF-003	The PoC interworking service SHALL support the following PoC communication modes: • 1-1 PoC Session, • PoC Group Sessions for Ad-hoc PoC Groups, Pre-arranged PoC Groups and Chat PoC Groups and 1-many-1 PoC Sessions, and, • Instant Personal Alert	PCPS V1.0
PCPS-IWF-004	The PoC Interworking Service SHOULD support the following PoC Communication Modes and settings: • PoC Service Settings (e.g., Automatic/Manual Answer, Incoming Session Baring, Incoming Talk Burst Baring), • Manual Answer Override, • Polite Calling, and, • Group Advertisement.	PCPS V1.0
PCPS-IWF-005	The PoC Interworking Service SHALL support the following PoC Functionality: • Address mapping of External P2T Network users requesting PoC Services from a External P2T Network, • Charging of PoC Services offered to PoC Users or External P2T Users, • Presence information supporting to the PoC Service, **Informational Note:** This only refers to the Presence information that can be carried by the PoC protocols. Presence information exchange between presence servers interworking is outside the scope of this specification. • Group Identities used by the PoC Service, and, • Conference state events information.	PCPS V1.0
PCPS-IWF-006	The PoC Interworking Service SHALL support the negotiation of: • Media Burst Control Protocol in PoC Sessions. • Codec and Media Parameter for PoC Sessions. • PoC Session modifications, • Media Burst Control Protocol options in PoC Sessions and, • User Plane adaptation in PoC Sessions. **Informational Note:** Further details of the interworking service are outside the scope of OMA specifications.	PCPS V1.0
PCPS-IWF-007	The PoC Interworking Service MAY support the following PoC Communication Mode: • Full Duplex Call Follow-on Proceed.	PCPS V1.0

Table 33: Interworking - General

6.1.15.1 External P2T Networks

This section contains the high level requirements for the Interworking Service for External Push-to-Talk Networks of the PCPS enabler.

The PoC Interworking service defines a service for Push To Talk communication between users of PoC Networks and users of External P2T Networks. Interworking service between a PoC Network and an External P2T Network is described here without describing the details of the services or specific functionality that may be provided by an External P2T Network. Interworking service is described from the perspective of a PoC Network and the communications that may be sent from a PoC Network toward an External P2T Network, and the communications that may be received into a PoC Network from an External P2T Network.

The External P2T Network system is presumed to manage its own subscribers, users and services. Authentication and authorization capabilities are presumed to be provided by the External P2T Network or the PCPS V1.0 interworking infrastructure or both for:

- External P2T Network interaction with and use of the PCPS V1.0 interworking service.
- External P2T Network users interacting with PoC Users and using PCPS V1.0 services.

However the requirements and specification of these are outside the domain of PCPS V1.0 specifications.

Label	Description	PCPS Release
Conditionality		
PCPS-IEN-001	The PoC Service Infrastructure MAY provide support of PoC Interworking with External P2T Networks.	PCPS V1.0
Functionality		
PCPS-IEN-002	A PoC User MAY initiate, join or be invited to a PoC Session including users of a trusted External P2T Network.	PCPS V1.0
PCPS-IEN-003	A PoC User MAY send or receive an Instant Personal Alert to or from an users of a trusted External P2T Network.	PCPS V1.0
PCPS-IEN-004	A PoC User SHOULD send or receive a Group Advertisement to or from users of a trusted External P2T Network.	PCPS V1.0

Table 34: Interworking and External P2T Networks

6.1.15.2 PoC Remote Access

This section contains the high level requirements for Remote Access function of the Interworking Service for the PCPS enabler.

A PoC Network may provide PoC Remote Access, allowing PoC Users to access PoC Services when the user is not directly connected to the PoC Network, not necessarily using a PoC Client. For example, a PoC User, with a valid subscription, is accessing PoC Services via a PSTN terminal.

Label	Description	PCPS Release
Conditionality		
PCPS-IRA-001	The PoC Service Infrastructure MAY provide support of PoC Remote Access.	PCPS V1.0
PCPS-IRA-002	The PoC Client MAY support the PoC Remote Access	PCPS V1.0
Functionality		
PCPS-IRA-003	A PoC Remote Access user, registered with a PoC Network MAY initiate, join or be invited to a PoC Session.	PCPS V1.0
PCPS-IRA-004	A PoC Remote Access user, registered with a PoC Network MAY send or receive an Instant Personal Alert.	PCPS V1.0
PCPS-IRA-005	A PoC Remote Access user, registered with a PoC Network MAY send or receive a Group Advertisement.	PCPS V1.0

Table 35: Interworking and Remote Access

6.1.16 PoC Box

This section contains the high level requirements for Media Burst Storage function of the PCPS Service Enabler.

PoC Box is the functionality to store PoC Media Bursts and related information (e.g., date & time, Sender Identification, and Participant information) on behalf of a PoC User, similar to a voice mail service. The PoC Box service is invoked either by the terminating PoC User, by the PoC Network on behalf of the PoC User, or it can be explicitly requested by the originator of the PoC Session. When participating in a PoC Session a PoC Box behaves like a PoC Client. A PoC Box may be collocated with the PoC Client and/or be a separate function in the PoC Network.

Label	Description	PCPS Release
Conditionality		
PCPS-PBO-001	The PoC Service Provider MAY offer services, based on the PoC Box functionality, to his PoC Subscribers.	PCPS V1.0
PCPS-PBO-002	The PoC Service Infrastructure MAY provide the PoC Box functionality.	PCPS V1.0
PCPS-PBO-003	The PoC Client MAY provide the PoC Box functionality.	PCPS V1.0
Functionality		
PCPS-PBO-004	The PoC Service SHALL have the means to route incoming 1-1 PoC Session invitations on behalf of a PoC User to his PoC Box based on various criteria such as the PoC User is unavailable. The PoC Box SHALL have the means to accept incoming 1-1 PoC Session invitations on behalf of a PoC User.	PCPS V1.0
PCPS-PBO-005	A PoC User SHALL have the means to explicitly request that incoming PoC Sessions are routed to his PoC Box.	PCPS V1.0
PCPS-PBO-006	If the PoC Box functionality is supported then an originating PoC User MAY have the possibility to explicitly request that the PoC Session is routed to the terminating PoC Users PoC Box. **Informational Note:** This functionality is similar to what is already deployed in most mobile voicemail services where a caller can explicitly set up a call to the called user's voice mailbox by using a prefix before called number.	PCPS V1.0
PCPS-PBO-007	If the PoC Session is accepted by a PoC Box, the originating PoC User SHALL be informed that the PoC Session was accepted by a PoC Box.	PCPS V1.0
PCPS-PBO-008	If a PoC Client collocated PoC Box accepts the PoC Session the PoC Client collocated PoC Box SHALL provide an indication to the PoC Service Infrastructure that a PoC Client collocated PoC Box accepted the PoC Session.	PCPS V1.0
PCPS-PBO-009	The PoC Service Infrastructure SHOULD forward the indication that a PoC Client collocated PoC Box accepted the PoC Session to the originating PoC Client.	PCPS V1.0
PCPS-PBO-010	If the PoC Client receives an indication that a PoC Client collocated PoC Box accepted the PoC Session the PoC Client MAY indicate this to the PoC User.	PCPS V1.0
PCPS-PBO-011	Inviting PoC User SHALL be notified of the existence of the PoC Box, when the PoC Session invitation has automatically been accepted by a PoC Box on behalf of a PoC User	PCPS V1.0
PCPS-PBO-012	A PoC User SHALL be able to manage (i.e., get notifications, retrieve, replay, store and delete) PoC Session Data and PoC Session Control Data belonging to that PoC User that is stored in the PoC Box using PoC Client capabilities.	PCPS V1.0

PCPS-PBO-013	When requesting the PoC Box service, the PoC User SHALL be able to configure PoC Box service parameters (e.g., size, time, or Media Type to be stored) that are used in recording PoC Session Data and PoC Session Control Data using PoC Client capabilities.	PCPS V1.0
PCPS-PBO-014	The PoC Address of the inviting PoC User SHALL be stored along with the Media Burst unless privacy has been requested by the inviting PoC User.	PCPS V1.0
PCPS-PBO-015	The PoC Box MAY store included text content in an incoming invitation to a PoC Session. All other types of media content SHALL be discarded.	PCPS V1.0

Table 36: PoC Box

6.1.17 Association between PoC Box and CPM Storage

This section contains the high level requirements for PoC Box interworking with CPM Storage for the PCPS enabler.

PoC Infrastructure can interwork with the CPM Storage functionality [OMA-CPM-TS-MSGSTOR]. This feature benefits a PoC User to utilize CPM storage capability to store PoC Media Bursts and related information that are stored by PoC Box.

Label	Description	PCPS Release
Conditionality		
PCPS-PBC-001	PoC Service Infrastructure MAY interwork to utilize CPM storage capability to store PoC Media Bursts and related information.	PCPS V1.0
Functionality		
PCPS-PBC-002	PoC Service Infrastructure MAY utilize CPM infrastructure to store PoC Media Bursts and related information (e.g. date & time, Sender Identification, and Participant information) which used to be stored in network based PoC Box.	PCPS V1.0
PCPS-PBC-003	The PoC Infrastructure SHALL be able to convert PoC information (e.g. Talk Burst or Media Burst) to CPM message, and send the CPM message to the CPM enabler.	PCPS V1.0
PCPS-PBC-004	The PoC Infrastructure MAY support converting CPM message to PoC based information (e.g.Talk Burst or Media Burst), and send it to the PoC User.	PCPS V1.0

Table 37: Association between PoC Box and CPM Storage

6.1.18 Dispatcher Functions

This section contains the high level requirements for Dispatcher Functions of the PCPS Service Enabler.

A PoC Dispatcher is a Participant that is able to use dedicated functionalities from his PoC Client. There are many different use cases where team based communication with PoC Dispatcher can be applied, e.g., to enable more specialist PoC Group communication between a team leader and his team.

Label	Description	PCPS Release
Conditionality		
PCPS-DPF-001	The PCPS V1.0 Service Infrastructure MAY support the PoC Dispatcher functionality. To further enhance on the PoC Dispatcher specific behaviour, the following requirements SHALL apply when the functionality is supported:	PCPS V1.0
PCPS-DPF-002	The PoC Client MAY support the PoC Dispatcher functionality.	PCPS V1.0
Functionality		

PCPS-DPF-003	According to the Service Provider Policy, the 1-many-1 PoC Session MAY be limited only to Pre-arranged PoC Groups composed of authorised PoC Users (e.g., the PoC Dispatcher and the rest of PoC Fleet Members to be included in the 1-many-1 PoC Session).	PCPS V1.0
PCPS-DPF-004	The PoC Dispatcher SHALL be able to establish a 1-many-1 PoC Session by sending an invitation to the Pre-arranged PoC Group or a subset of the Pre-arranged PoC Group supporting 1-many-1 PoC Session.	PCPS V1.0
PCPS-DPF-005	The PoC Dispatcher SHALL be able to have pre-emptive Media Burst priority over the PoC Fleet Members in an ongoing 1-many-1 PoC Session.	PCPS V1.0
PCPS-DPF-006	The PoC Dispatcher SHALL be able to have pre-emptive Media Burst priority over a PoC Fleet Member in an ongoing 1-1 PoC Session.	PCPS V1.0
PCPS-DPF-007	The PoC Dispatcher SHALL be able to use the Manual Answer Override feature towards any PoC Fleet Member who supports this feature.	PCPS V1.0
PCPS-DPF-008	The PoC Dispatcher SHALL be able to expel any PoC Fleet Member from an ongoing 1-1 or 1-many-1 PoC Session (including all PoC Fleet Members at once)	PCPS V1.0
PCPS-DPF-009	According to the PoC Service Provider's policy, the PoC Dispatcher SHALL be notified when a PoC Session has been re-directed to other PoC Dispatcher(s) (e.g., in case of being busy).	PCPS V1.0
PCPS-DPF-010	The PoC Dispatcher SHALL be able to redirect a 1-many-1 PoC Session to another PoC Dispatcher, if needed.	PCPS V1.0
PCPS-DPF-011	The PoC Dispatcher MAY be able to request an invitation for a 1-many-1 PoC Session to be resent to PoC Fleet Members(s) who did not receive the original invitation message (e.g., being out of coverage). **Informational Note:** This requirement above is also useful for ordinary Pre-arranged PoC Group Session invitations.	PCPS V1.0
PCPS-DPF-012	A PoC Fleet Member SHALL be able to be informed if the PoC Dispatcher is communicating with him in 1-1 mode.	PCPS V1.0
PCPS-DPF-013	A PoC Fleet Member SHALL be able to subscribe to the status of the PoC Session and receive a notification if the PoC Session with the PoC Dispatcher has been diverted to another PoC Dispatcher (e.g., when the initial PoC Dispatcher is busy or has re-directed, manually, to another PoC Dispatcher).	PCPS V1.0
PCPS-DPF-014	A PoC Fleet Member MAY be able to obtain identities, subject to privacy rules, of other PoC Fleet Members in a 1-many-1 PoC Session.	PCPS V1.0

Table 38: Dispatcher Functions

6.1.19 Other Services

6.1.19.1 Operator Specified Warning Message

This section contains the high level requirements for the Operator Specified Warning Message feature of the PCPS enabler.

The operator specified warning message is a free text message that is sent from the PoC Server to the PoC Client in order to present miscellaneous information from the PoC Service Provider to the PoC User. If the PoC Service Provider wants to notify arbitrary messages besides the warning texts that are statically implemented on the PoC Client and the PoC Server, the PoC Service Provider may utilise this functionality. Based on the local policy determined by the PoC Service Provider,

various languages may be used in the operator specified warning message. Languages to be supported are totally optional both on the PoC Server and the PoC Client.

Label	Description	PCPS Release
Conditionality		
PCPS-OSW-001	The PoC Service Infrastructure MAY support the operator specified warning message functionality.	PCPS V1.0
PCPS-OSW-002	The PoC Client SHOULD support the operator specified warning message functionality.	PCPS V1.0
Functionality		
PCPS-OSW-003	PoC Server MAY have the ability to send a warning message according to the Service Provider Policy. PoC Clients SHOULD be able to display such a message if it is sent from the PoC Server and if the language is supported. User Equipments, which have limited capability for displaying such a message, may be unable to support this capability.	PCPS V1.0
PCPS-OSW-004	PoC Client SHOULD be able to request to the PoC Server the language that it can accept. Upon receiving such an accept language request, the PoC Server SHALL be able to send back a response using the requested language in the warning text if the language is supported	PCPS V1.0
PCPS-OSW-005	PoC Server MAY be able to send warning message in a response to a request from a PoC Client. If supported, the warning text SHALL be able to contain miscellaneous information to be presented to the PoC User. The PoC Service Provider can send an appropriate message to the PoC Client using the warning text.	PCPS V1.0
PCPS-OSW-006	PoC Client SHOULD display on the device the received warning message as it is received.	PCPS V1.0

Table 39: Operator Specified Warning Message

6.1.19.2 Browser-Based Client Invocation

This section contains the high level requirements for Browser-Based Client Invocation for the PCPS enabler.

Browsers are widely deployed in User Equipment and have extensive capability for presentations. A Web server that has connections to the XDM server facilitates PoC Session initiation as well as presents other information. In order to increase usability, a PoC User is able to initiate PoC Sessions while the PoC User is browsing the Web server.

Label	Description	PCPS Release
Conditionality		
PCPS-BBC-001	The PoC Service Infrastructure MAY support browser-based PoC Client invocation functionality.	PCPS V1.0
PCPS-BBC-002	The PoC Client MAY support the browser-based PoC Client invocation functionality.	PCPS V1.0
Functionality		
PCPS-BBC-003	The PoC User SHALL be able to invoke a PoC Client and initiate a PoC Session (i.e., 1-1, Ad-hoc, Chat, or Pre-arranged Group PoC Session), seamlessly and automatically, while browsing the Web site from the same User Equipment.	PCPS V1.0

PCPS-BBC-004	In the case of 1-1, Chat, and Pre-arranged Group PoC Sessions, the PoC User SHALL be able to initiate a PoC Session by clicking on a menu on a Web page presented on a browser. In the case of an Ad-hoc PoC Group Session, the PoC User SHALL be able to select the PoC Users to invite from a Web page presented on a browser before clicking on a menu to initiate a PoC Session.	PCPS V1.0
PCPS-BBC-005	To accomplish the above requirements for each PoC Session including enhanced ones, the mechanism SHALL be extensible to convey all the necessary current and evolving information to initiate a PoC Session.	PCPS V1.0

Table 40: Browser-Based PoC Client Invocation

6.1.19.3 External Media Content Server Retrieval

This section contains the high level requirements for External Media Content Server Retrieval for the PCPS enabler.

The External Media Content Server Retrieval allows a Participant to request media content from a non PoC compliant External Media Content Server, and then for the media content to be conveyed to the Participants of the PoC Session. The External Media Content Server can perform tasks out of scope of PoC, e.g. , conveying static or streaming media content, accessing a network camera to perform security surveillance of a building, etc. It may be possible for a PoC User to remotely control the External Media Content Server.

Label	Description	PCPS Release
Conditionality		
PCPS-EMR-001	The PoC Service Infrastructure SHALL support the External Media Content Server Retrieval feature.	PCPS V1.0
PCPS-EMR-002	The PoC Client MAY support the External Media Content Server Retrieval feature.	PCPS V1.0
Functionality		
PCPS-EMR-003	The PoC Service Infrastructure SHALL support access and control media for some or all Participants to an External Media Content Server.	PCPS V1.0
PCPS-EMR-004	The PoC Client MAY request the retrieval of media content from External Media Content Server.	PCPS V1.0
PCPS-EMR-005	The PoC Service Infrastructure SHALL retrieve the media content from the External Media Content Server upon PoC Client request, and distribute the media content to all Participants. **Informational Note:** The Service Infrastructure does not distribute the request for the media content retrieval to the other Participants of the PoC Session.	PCPS V1.0
PCPS-EMR-006	The PoC Service Infrastructure SHALL support a mechanism to allow a PoC Client to exclusively control a streaming External Media Content Server.	PCPS V1.0

Table 41: External Media Content Server Retrieval

6.1.19.4 Session Search

This section contains the high level requirements for the Session Search function of the PCPS Service Enabler.

PoC Session Search is the functionality to allow a PoC User to find out ongoing PoC Group Sessions which are available and open for those PoC Users based on Service Provider's policy.

Label	Description	PCPS Release
Conditionality		

PCPS-SSG-001	The PoC Service Infrastructure MAY support the PoC Session Search functionality.	PCPS V1.0
PCPS-SSG-002	The PoC Client MAY support PoC Session Search.	PCPS V1.0
Functionality		
PCPS-SSG-003	In case of Pre-arranged PoC Group Session and Chat PoC Group Session, a PoC User SHALL be able to use a condition (e.g. subject; i.e. a topic or description of the Group) in the Group document as search criterion to search ongoing PoC Group Sessions of which the PoC User is allowed to join in the domain owned by the Service Provider or in other Service Providers' domains if corresponding business agreements exist between the Service Providers.	PCPS V1.0
PCPS-SSG-004	In case of Pre-arranged PoC Group Session, Chat PoC Group Session and Ad-hoc PoC Group Session, a PoC User SHALL be able to search ongoing PoC Group Sessions without any condition (e.g. subject) of which the PoC User is allowed to join in the domain owned by the Service Provider or in other Service Providers' domains if corresponding business agreements exist between the Service Providers.	PCPS V1.0

Table 42: Session Search – Group

6.1.20 Lawful Interception

This section contains the high level requirements for Lawful Interception for the PCPS Service Enabler.

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

Label	Description	PCPS Release
Conditionality		
PCPS-LAW-001	The PoC Service Infrastructure SHALL provide support for lawful interception. **Informational Note**: This requirement may be subject to local policy on whether lawful interception is allowed.	PCPS V1.0
Functionality		
PCPS-LAW-002	The PoC Service Enabler SHALL be able to provide information available in the PoC Network for support of lawful interception by regional law enforcement authorities of PoC Sessions of an identified PoC User.	PCPS V1.0
PCPS-LAW-003	The PoC Service Enabler SHALL be able to provide the available PoC Address information of all Participants of particular PoC Sessions when supporting a lawful interception request regardless of anonymity or privacy settings.	PCPS V1.0
PCPS-LAW-004	The PoC Service Enabler SHALL be able to ensure that the Media Burst content is available to law enforcement in support of a lawful interception request (e.g., by providing decryption information or decrypting any encrypted content, or providing decompression information or decompressing any compressed content) when the PoC Service Provider furnishes the encryption or uses compression.	PCPS V1.0
PCPS-LAW-005	Available and applicable underlying network (e.g., SIP/IP Core) capabilities SHOULD be used to support lawful interception requirements as much as possible.	PCPS V1.0

Table 43: Lawful Interception

6.1.21 Operational Requirements

6.1.21.1 General Operational Requirements

This section contains the high level Operational Requirements of the PCPS enabler.

Label	Description	PCPS Release
PCPS-OPR-001	PoC Subscriber SHALL be able to request the PoC Service Provider to create a PoC group on his behalf.	PCPS V1.0
PCPS-OPR-002	PoC Service Provider SHALL be able to create a PoC group according to the request of a PoC Subscriber.	PCPS V1.0
PCPS-OPR-003	Service Provider SHOULD be able to advertise the PoC group information (e.g., PoC Group Identity, PoC group administrator of the PoC group)..	PCPS V1.0
PCPS-OPR-004	PoC Host SHOULD be able to advertise the PoC group (e.g. group identity) to all group members.	PCPS V1.0
PCPS-OPR-005	The PoC Host SHOULD also be able to allow any subscriber to advertise the unrestricted PoC group to any user.	PCPS V1.0
PCPS-OPR-006	PoC Service Provider MAY grant administrative rights to a PoC Subscriber.	PCPS V1.0
PCPS-OPR-007	A PoC Subscriber MAY join a PoC group by sending the request to the PoC Host of the PoC group. **Informational Note**: The mechanism a PoC Subscriber uses to request this to the PoC Host is out of scope of the PCPS enabler.	PCPS V1.0
PCPS-OPR-008	A PoC Host SHALL be able to remove a PoC Group Member from the PoC group.	PCPS V1.0
PCPS-OPR-009	A PoC Service Entity MAY be able to queue the Request-to-Speak.	PCPS V1.0
PCPS-OPR-010	A PoC Participant SHALL be able to cancel a Request-to-Speak.	PCPS V1.0
PCPS-OPR-011	A PoC Participant SHALL be able to receive notification of incoming requests for other services (e.g. an incoming simple voice call) while in a PoC Session.	PCPS V1.0
PCPS-OPR-012	A PoC Participant SHALL be able to switch between listening mode and “not ready to listen” mode.	PCPS V1.0

Table 44: High-Level General Operational Requirements

6.1.21.2 Identity

This section contains the high level Operational Requirements for Identity of the PCPS enabler.

Label	Description	PCPS Release
PCPS-OPI-001	When a PoC User receives the incoming PoC Session invitation, he SHALL also receive the identity of the inviting PoC User, in the form of user identity and, if provided, the display name. If the inviting PoC User’s identity is restricted, it SHALL NOT be provided in this case.	PCPS V1.0
PCPS-OPI-002	The display name MAY be provided either by the inviting PoC User or by the PoC Service Entity.	PCPS V1.0
PCPS-OPI-003	The PoC Service Entity MAY replace the display name provided by the PoC User.	PCPS V1.0
PCPS-OPI-004	The PoC Group Identity SHALL also be given to the invited PoC User.	PCPS V1.0

PCPS-OPI-005	The identity of the PoC Participant, who has been granted the floor, SHALL be distributed to all other PoC Participants in the PoC Session. If the PoC User's identity is restricted, it SHALL NOT be provided in this case.	PCPS V1.0
PCPS-OPI-006	The PoC Participant who has been granted the floor SHALL be identified (when permitted) with his PoC User identity and/or display name depending on the setting.	PCPS V1.0
PCPS-OPI-007	Each PoC Participant SHALL be identified (when permitted) by an alphanumeric indication (e.g. MSISDN or SIP URI). Additionally, he SHALL be able to use his display name during his participation in the PoC Session.	PCPS V1.0
PCPS-OPI-008	Each PoC group SHALL have a unique alphanumeric identifier (e.g. SIP URI) and MAY have a display name.	PCPS V1.0
PCPS-OPI-009	The PoC Service Entity SHOULD be able to support identifiers that use various alphabets (e.g. Arabic, Cyrillic, and Chinese).	PCPS V1.0

Table 45: High-Level Identity Requirements

6.1.21.3 Contact List

This section contains the high level Operational Requirements for Contact List of the PCPS enabler.

Label	Description	PCPS Release
PCPS-OPC-001	Each PoC User SHOULD be able to create at least one list of other PoC Users and PoC groups which MAY easily be used to address the PoC Users or the PoC groups to whom he would like to speak.	PCPS V1.0
PCPS-OPC-002	In order to recover from loss or to manage change of the PoC client, it SHOULD be possible to store the backup copy of a contact list off the client.	PCPS V1.0
PCPS-OPC-003	To support the requirements for contact list, capabilities common to other OMA service enablers SHALL be leveraged, where possible and appropriate.	PCPS V1.0
PCPS-OPC-004	The PoC Service Entity SHOULD be able to provide PoC Subscriber off-line access to session history information based on relevant information collected for charging purposes, see section [6.1.37 Charging]**.** **Informational Note:** Examples of PoC Session history available may include: group sessions participated, time stamps & durations, identities of participants	PCPS V1.0

Table 46: High-Level Contact List Requirements

6.1.21.4 Incoming Session Barring

This section contains the high level Operational Requirements for Incoming Session Barring of the PCPS enabler.

Label	Description	PCPS Release
PCPS-OIB-001	In case a PoC User does not want to be invited to any new PoC Sessions, the PoC User SHALL be able to activate a setting to reject all new incoming talk sessions. This action SHALL have no effect on the PoC User's ability to send or receive talk bursts in PoC Sessions, which he is participating in at the time it is performed. This action SHALL have no effect on the PoC User's ability to send or receive Instant Personal Alerts.	PCPS V1.0

PCPS-OIB-002	If a PoC User tries to invite another PoC User whose Incoming Session Barring setting is active, the inviting PoC User SHALL receive an appropriate failure message.	PCPS V1.0

Table 47: High-Level Incoming Session Barring Requirements

6.1.21.5 Instant Personal Alert Barring

This section contains the high level Operational Requirements for Instant Personal Alert Barring of the PCPS enabler.

Label	Description	PCPS Release
PCPS-OAB-001	In case a PoC User does not want to receive Instant Personal Alerts, the PoC User MAY be able to activate a setting to reject all new incoming Instant Personal Alerts. This action SHALL have no effect on the PoC User's ability to send or receive talk bursts in PoC Sessions.	PCPS V1.0
PCPS-OAB-002	If a PoC User tries to send an Instant Personal Alert to another PoC User whose Instant Personal Alert Barring setting is active, the inviting PoC User SHALL receive an appropriate failure message.	PCPS V1.0

Table 48: High-Level Instant Personal Alert Barring Requirements

6.1.21.6 Deactivate Incoming Talk-Bursts

This section contains the high level Operational Requirements for Deactivate Incoming Talk-burst of the PCPS enabler.

Label	Description	PCPS Release
PCPS-ODB-001	A PoC User SHALL be able to deactivate and re-activate the incoming talk bursts of the ongoing PoC Sessions.	PCPS V1.0

Table 49: High-Level Deactivate Incoming Talk-Burst Requirements

6.1.21.7 Service Mobility

This section contains the high level Operational Requirements for Service Mobility of the PCPS enabler.

Label	Description	PCPS Release
PCPS-OSM-001	PoC User SHALL be able to use the PoC service features with other PoC Users of the same PoC Service Provider.	PCPS V1.0
PCPS-OSM-002	PoC User SHOULD be able to use the PoC service when roaming to another PoC Service Provider's network subject to service providers' agreement.	PCPS V1.0

Table 50: High-Level Service Mobility Requirements

6.1.22 Presence Requirements

This section contains the high level Requirements of the Presence Feature for the PCPS enabler. This feature allows the PoC User to express his Presence status.

Informational Note: Some of the presence states in the table below are mutually exclusive. For example, a PoC User would need to be "Registered" in order to be "Active in at least one PoC Session".

Label	Description	PCPS Release
Conditionality		
PCPS-PRS-001	A PoC User MAY have a set of Presence elements available to be published on his behalf.	PCPS V1.0
Functionality		

PCPS-PRS-002	The PoC User SHALL be able to manipulate his presence settings in accordance with applicable and appropriate Presence Service standards.	PCPS V1.0
PCPS-PRS-003	The PoC User MAY publish different presence information to other PoC Users, as determined by their privacy preferences.	PCPS V1.0
PCPS-PRS-004	This PoC Service Enabler SHALL not prevent operations of other Presence features based on applicable and appropriate Presence Standards when they are used in combination with PoC.	PCPS V1.0
PCPS-PRS-005	The PoC Service Enabler MAY communicate the presence state: Do Not Disturb – New Incoming Session (Yes/No): Indicates whether the PoC User is currently willing to accept new incoming PoC Sessions. If the PoC User activates the Incoming Session Barring (as described in section [6.1.21.4 Incoming Session Barring]) this element is set to indicate the user's Incoming Session Barring setting.	PCPS V1.0
PCPS-PRS-006	The PoC Service Enabler MAY communicate the presence state: Do Not Disturb - Alerts (Yes/No): Indicates whether the PoC User is currently willing to accept incoming Instant Personal Alerts. If the PoC User activates the Instant Personal Alert Barring setting (as described in section [6.1.21.5 Instant Personal Alert Barring]) this element is set to indicate the user's Instant Personal Alert Barring setting.	PCPS V1.0
PCPS-PRS-007	The PoC Service Enabler MAY communicate the presence state: Registered (True, False): Indicates whether the PoC User is "registered" with the PoC service. When a PoC User registers with the PoC Service Enabler, this presence element is set to "True". When the PoC User's terminal is no longer registered (e.g. through expiration or removal of the registration), it is set to "False".	PCPS V1.0
PCPS-PRS-008	The PoC Service Enabler MAY communicate the presence state: Able to accept new incoming PoC Session (True, False): Indicates whether the PoC User is able to accept a new incoming PoC Session. When a PoC User is able to accept new incoming PoC Sessions, this presence element is set to "true". If for some reason the PoC User is not able to accept new incoming PoC Sessions (e.g. limit of concurrent PoC Sessions is reached, terminal registration is removed, etc.) this presence element is set to 'false".	PCPS V1.0
PCPS-PRS-009	The PoC Service Enabler MAY communicate the presence state: Able to accept incoming Instant Personal Alerts (True, False): Indicates whether the PoC User is able to accept incoming Instant Personal Alerts. When a PoC User is able to accept incoming Instant Personal Alerts, this presence element is set to "true". If for some reason the PoC User is not able to accept incoming Instant Personal Alerts this presence element is set to 'false".	PCPS V1.0
PCPS-PRS-010	The PoC Service Enabler MAY communicate the presence state: Currently in at least one PoC Session (True, False): Indicates whether the PoC User is currently engaged in one or more PoC Sessions. When a PoC User engages in a PoC Sessions, this presence element is set to "true". When a PoC User's last PoC Session is terminated, this presence element is set to "false".	PCPS V1.0
PCPS-PRS-011	Additional presence elements MAY also be communicated as defined in the relevant Presence enabler specification.	PCPS V1.0

PCPS-PRS-012	The PoC Service Enabler SHALL ensure that the *optional* publication and/or subscription to the above attributes is done in a fashion that does not adversely impact network performance. The PoC Service Enabler MAY do so by limiting the scope, frequency or recipients of such messages.	PCPS V1.0
PCPS-PRS-013	The non-communication of one or more of those presence elements SHALL not adversely impact the functionality of the PoC Service Enabler.	PCPS V1.0

Table 51: High-Level Presence Requirements

6.1.23 Multiple Group Operation

This section contains the high level requirements with respect to Multiple Group Operation of the PCPS enabler.

This feature is included in the concept of Simultaneous PoC Session.

Label	Description	PCPS Release
Conditionality		
PCPS-MGO-001	The PoC Service Entity MAY support the multiple group operation functionality.	PCPS V1.0
PCPS-MGO-002	The PoC Client MAY support the multiple group operation functionality.	PCPS V1.0
PCPS-MGO-003	Service Provider Policy MAY apply before the PoC User is authorised to use this feature.	PCPS V1.0
Functionality		
General		
PCPS-MGO-004	PoC User SHALL be able to participate in more than one PoC Group Session at the same time	PCPS V1.0
PCPS-MGO-005	One of the PoC groups MAY be a primary PoC group and the rest of the PoC groups SHALL be secondary PoC groups	PCPS V1.0
PCPS-MGO-006	Primary PoC group communications SHALL have priority over secondary PoC group communication as defined in the following subsections of this table.	PCPS V1.0
Multiple Group Operation: No Primary Groups		
PCPS-MGO-007	PoC User SHALL be able to monitor multiple PoC Group Sessions.	PCPS V1.0
PCPS-MGO-008	PoC User SHALL start to hear traffic from any group where communication starts first.	PCPS V1.0
PCPS-MGO-009	The PoC User SHALL get an identification of the group session(s) in which traffic is being received.	PCPS V1.0
PCPS-MGO-010	When the PoC User wants to talk or listen into a group, he SHALL be able to select the group to which he wants to talk. Once a group has been selected, the PoC User SHALL continue to hear traffic from that group until the discussion ends, or when he takes another action (e.g. deactivates talk-bursts or selects another group session for talking/listening). While talking or listening to the selected group session, he SHALL be able to continue monitoring the other group sessions.	PCPS V1.0
PCPS-MGO-011	If there is traffic in more than one group session at the same time, there SHOULD be a means to filter the traffic so that the PoC User only hears a single conversation at a time. Traffic from the selected group session SHALL have higher priority over traffic from the other groups being monitored. The affected participants whose talk-bursts are being filtered SHOULD not be notified.	PCPS V1.0

PCPS-MGO-012	When the PoC User is talking, his transmission SHALL not be interrupted because of traffic arriving in another group session, i.e. transmission SHALL have higher priority than reception, but he SHOULD receive an indication in the event that there is traffic on another PoC Session.	PCPS V1.0
Multiple Group Operation: One Primary Group and Secondary Group(s)		
PCPS-MGO-013	If there is no traffic in the primary group, the PoC User SHALL receive traffic from secondary groups according to all the requirements described in [**Multiple Group Operation: No Primary Groups**] section of this table.	PCPS V1.0
PCPS-MGO-014	Traffic in the primary group SHALL always have higher priority than traffic in any secondary group. As soon as speech from the primary group arrives, it SHALL be heard immediately, even if the PoC User was receiving speech in a secondary group.	PCPS V1.0
PCPS-MGO-015	When the PoC User is talking on a secondary group, he SHALL NOT hear any traffic from the primary group. His transmission to the secondary group SHALL NOT be affected by traffic on the primary group, but he SHOULD receive an indication in the event that there is traffic on the primary PoC group.	PCPS V1.0
PCPS-MGO-016	As long as there is traffic in the primary group, the PoC User SHALL continue hearing it, until the discussion has ended, or when he takes another action (e.g. deactivates talk-bursts or selects another group session for talking/listening). While talking or listening to the primary group, he SHOULD be able to continue monitoring the other group sessions.	PCPS V1.0
PCPS-MGO-017	When the user wants to talk or listen into a group, it SHALL be possible to have the primary group as the default selected target.	PCPS V1.0
PCPS-MGO-018	The user MAY be able to change his/her primary group.	PCPS V1.0

Table 52: High-Level Functional Requirements – Multiple Group Operation

6.1.24 PoC Sessions with Multiple PoC Groups

This section contains the high level requirements for the PoC Sessions with Multiple PoC Groups of the PCPS Service Enabler.

PoC Network elements can support Ad-hoc PoC Groups Sessions, that invite individual PoC Users and/or one or more Pre-arranged PoC Groups. PoC Network Elements can also support Ad-hoc PoC Groups Sessions where the target URI contains URIs that contain other PoC Groups, which in turn can contain yet other PoC Groups, and so on.

Label	Description	PCPS Release
Conditionality		
PCPS-SMG-001	A PoC Service Infrastructure SHALL support establishing an Ad-hoc PoC Group Session involving one or more Pre-arranged PoC Groups and individual PoC Users.	PCPS V1.0
PCPS-SMG-002	A PoC Client MAY support initiating an Ad-hoc PoC Group Session involving one or more Pre-arranged PoC Groups and individual PoC Users.	PCPS V1.0
Functionality		
PCPS-SMG-003	A PoC Client SHALL be able to establish an Ad-hoc PoC Group Session involving one or more Pre-arranged PoC Groups and individual PoC Users	PCPS V1.0

PCPS-SMG-004	The invited Pre-arranged PoC Groups MAY reside on separate group management servers, each possibly owned by a different PoC Service Provider or otherwise in another administrative domain. This is subject to interdomain agreement(s).	PCPS V1.0
PCPS-SMG-005	The PoC Session Identity of the resulting Ad hoc PoC Group Session with multiple PoC Groups SHALL be dynamically selected and distinct from the PoC Group Identities of the invited Pre-arranged PoC Groups.	PCPS V1.0
PCPS-SMG-006	The invited PoC Users MAY be represented as PoC Users of a URI that contain Nested Groups and/or individual PoC Users. These Nested Groups MAY similarly contain individual PoC Users or other Nested Groups. Each such Nested Group MAY possibly be owned by a different PoC Service Provider, or MAY otherwise be in another administrative domain.	PCPS V1.0
PCPS-SMG-007	The maximum number of Participants of the resulting Ad hoc PoC Session SHALL not exceed the maximum number of Participants permitted for the Ad hoc PoC Group Session.	PCPS V1.0

Table 53: Sessions with Multiple Groups

6.1.25 XML Document Management Requirements

This section contains the high level requirements for the XML document management functionality of the PCPS enabler.

Label	Description	PCPS Release
PCPS-XDM-001	The PoC Service Infrastructure SHALL support the XML document management functionality with multiple User Equipment having the same PoC Address.	PCPS V1.0

Table 54: XML Document Management Requirements

6.1.26 Privacy

This section contains the high level requirements for privacy functionality of the PCPS enabler.

Label	Description	PCPS Release
Functionality		
PCPS-PRV-001	A PoC Service Entity SHALL allow a PoC Participant to hide his identity from all of the other PoC Participants and SHOULD be able to hide his identity from some of the PoC Participants. However, a PoC Group Administrator SHOULD NOT be compelled to accept unidentified participants into a PoC Session.	PCPS V1.0
PCPS-PRV-002	A PoC Participant SHALL be able to select the identity that is displayed to the other PoC Participants, which MAY be in the nickname form, URI form or MSISDN form.	PCPS V1.0
PCPS-PRV-003	The PoC Service Entity SHALL NOT disclose either the PoC Subscribers' or PoC Users' personal data, e.g. identity or subscribed-to PoC groups, to any unwanted parties, in order to prevent undesired PoC Session invitations.	PCPS V1.0
PCPS-PRV-004	The PoC Service Entity SHALL provide secure storage for PoC both the PoC Subscribers' and PoC Users' personal data, e.g. identity or subscribed-to groups.	PCPS V1.0
PCPS-PRV-005	Privacy requirements SHALL be compliant with requirements stated in [OMA Privacy RD].	PCPS V1.0

Table 55: Privacy

6.1.27 Legacy Handset Support

This section contains the high level requirements for legacy handset support functionality of the PCPS enabler.

The PoC Service enabler features are only accessible to PoC subscribers, subject to the scope of his PoC service subscription, and his terminal device capabilities

Label	Description	PCPS Release
Functionality		
PCPS-LEG-001	If special means and/or updates of the PoC User's handset are necessary in order to access any part of the PoC Service Enabler, it SHOULD be possible for a PoC User to "update" his mobile in an easy way (e.g. over-the-air download).	PCPS V1.0

Table 56: Legacy Handset Support

6.1.28 Support of PoC Usage in Enterprise/Corporate Environment

This section contains the high level requirements for PoC Usage in Enterprise/Corporate Environment functionality of the PCPS enabler.

The following requirements applicable to PoC usage in enterprise/corporate environment are in addition to other requirements covered throughout Chapter [6].

Label	Description	PCPS Release
Conditionality		
PCPS-ENT-001	The PoC Service Entity SHALL be able to interact with a Corporate PoC System, subject to commercial agreement.	PCPS V1.0
Functionality		
PCPS-ENT-002	When interacting with a corporate environment, the PoC Service Entity SHOULD ensure that private addresses used within the corporate environment are not exposed, shared or broadcast to PoC Users outside of the corporation.	PCPS V1.0

Table 57: Support of PoC Usage in Enterprise/Corporate Environment

6.1.29 Duration of speaking

This section contains the high level requirements for duration of speaking functionality of the PCPS enabler.

Label	Description	PCPS Release
Conditionality		
PCPS-DUR-001	The PoC Service Provider SHALL be able to configure the maximum duration of speaking by PoC Participants in a PoC Session.	PCPS V1.0
Functionality		
PCPS-DUR-002	If a maximum speaking duration is configured and a PoC Participant speaking reaches the time limit, the PoC Participant's Right-to-Speak SHALL be automatically revoked.	PCPS V1.0
PCPS-DUR-003	If a maximum speaking duration is in effect, the speaking PoC Participant SHALL be informed (e.g. by means of sound, flashing light or graphics) when the maximum speaking duration limit has been reached.	PCPS V1.0

Table 58: Duration of Speaking

6.1.30 Manual Answer Override

This section contains the high level requirements for Manual Answer Override functionality of the PCPS enabler.

The Manual Answer Override feature supports a means for an inviting PoC User to override an invited PoC Users manual answer settings

Label	Description	PCPS Release
Conditionality		
PCPS-MAO-001	A PoC Service Entity MAY support Manual Answer Override.	PCPS V1.0
PCPS-MAO-002	A PoC client MAY support Manual Answer Override.	PCPS V1.0
PCPS-MAO-003	Service Provider Policy MAY apply before the PoC User is authorized to use Manual Answer Override.	PCPS V1.0
Functionality		
PCPS-MAO-004	An authorised PoC User MAY be able to request the overriding of another PoC User's manual answer preference, i.e. the inviting PoC User's speech is immediately audible at the invited PoC User's terminal without any action by the invited PoC User	PCPS V1.0
PCPS-MAO-005	A PoC Service Enabler that supports this feature SHALL provide means to ensure that any PoC User using this feature has previously been authorised to do so on behalf of the invited PoC User	PCPS V1.0
PCPS-MAO-006	A PoC Service Enabler that supports this feature SHALL verify the authorisation to use the manual override service each time the service is invoked	PCPS V1.0
PCPS-MAO-007	If use of the feature is authorised then the Inviting user's speech SHALL be immediately audible at the invited PoC User's terminal, except in the following circumstances: • The network operator has blocked access. • The invited PoC User is not connected • In emergency situations, the service provider SHALL be able to administratively allow one of more PoC Users to the override the PoC Sessions.	PCPS V1.0
PCPS-MAO-008	If use of the feature is authorised but the initiation of the session cannot be completed for any of the reasons listed above, the inviting PoC User SHALL be notified accordingly, possibly with the reason for failure.	PCPS V1.0
PCPS-MAO-009	If use of the feature is not authorised, the inviting PoC User SHALL be notified accordingly	PCPS V1.0
PCPS-MAO-010	A PoC User who is authorised to use this feature MAY be able to select it on a session-by-session basis.	PCPS V1.0

Table 59: Manual Answer Override

6.1.31 Service Provisioning by Service Provider

This section contains the high level Operational Requirements for Service Provisioning by the Service Provider for the PCPS Enabler.

Label	Description	PCPS Release
PCPS-SPV-001	Where device management is supported by the PoC Service Entity and the PoC User's terminal and client, it SHALL be possible for the PoC Service Provider to set up and update PoC communication feature configuration remotely in the terminal device.	PCPS V1.0
PCPS-SPV-002	The Service Provider Provisioning SHOULD include the capability to cause a new contact list or update of an existing contact list to be remotely installed on a PoC User's client.	PCPS V1.0
PCPS-SPV-003	The Service Provider Provisioning SHOULD include the capability to cause Accept/Reject lists or update of an existing accept/reject list to be remotely installed on a PoC User's client.	PCPS V1.0
PCPS-SPV-004	It SHALL be possible for the PoC Service Provider to provide means (e.g. a user-interface from the PoC User's terminal or via a web page) for the PoC User to configure and update his PoC settings (e.g. manage Group Lists or accept/reject lists).	PCPS V1.0

Table 60: High-Level Service Provisioning by Service Provider Requirements

6.1.32 Interoperability

PCPS Network Elements provide backwards compatibility with PoC V1.0, PoC V2.0 and PoC 2.1 entities.

Label	Description	PCPS Release
PCPS-INT-001	PCPS V1.0 Service Infrastructure SHALL support PoC V1.0 Clients and PoC V1.0 Service Infrastructures offering PoC V1.0 functionality.	PCPS V1.0
PCPS-INT-002	While connected to a PoC V1.0 Network, PCPS V1.0 Clients SHALL support PoC V1.0 functionality.	PCPS V1.0
PCPS-INT-003	PCPS V1.0 Service Infrastructure SHALL support PoC V2.0 Clients and PoC V2.0 Service Infrastructures offering PoC V2.0 functionality.	PCPS V1.0
PCPS-INT-004	While connected to a PoC V2.0 Network, PCPS V1.0 Clients SHALL support PoC V2.0 functionality.	PCPS V1.0
PCPS-INT-005	PCPS V1.0 Service Infrastructure SHALL support PoC V2.1 Clients and PoC V2.1 Service Infrastructures offering PoC V2.1 functionality.	PCPS V1.0
PCPS-INT-006	While connected to a PoC V2.1 Network, PCPS V1.0 Clients SHALL support PoC V2.1 functionality.	PCPS V1.0

Table 61: Interoperability

6.1.33 Separate 1-to-1 PoC Session while Having a PoC Session

This section contains the high level Operational Requirements for Separate 1-to-1 PoC Session while having a PoC session for the PCPS Enabler.

This feature is included in the concept of Simultaneous PoC Session.

Label	Description	PCPS Release
Conditionality		
PCPS-SOP-001	The PoC Client MAY support separate 1-to-1 PoC Session while having a PoC Session.	PCPS V1.0
PCPS-SOP-002	The PoC Service Entity MAY support separate 1-to-1 PoC Session while having a PoC Session.	PCPS V1.0

PCPS-SOP-003	The Service Provider policy MAY apply before the PoC User is authorised to use separate 1-to-1 PoC Session while having a PoC Session.	PCPS V1.0
Functionality		
PCPS-SOP-004	A PoC User who participates in a PoC Session (1-to-1 or 1-to-many) SHALL be able to initiate and conduct a separate 1-to-1 PoC Session with any other PoC User. In the case where the invited user is in a 1-to-many session, the second session MAY be established to a participant of the same or different group.	PCPS V1.0
PCPS-SOP-005	A PoC User of an ongoing PoC Session (1-to-1 or 1-to-many) SHALL be able to receive separate 1-to-1 PoC Session communications from any other PoC User. In the case where the inviting user is in a 1-to-many session, the second session MAY be received from a participant of the same or different group.	PCPS V1.0
PCPS-SOP-006	The separate 1-to-1 PoC Session by a PoC group participant SHALL NOT affect in any way the existing communications between other PoC group participants.	PCPS V1.0
PCPS-SOP-007	The 1-to-1 PoC Participants SHALL NOT receive speech from the previous session communication while sending or receiving speech from a separate 1-to-1 PoC Session.	PCPS V1.0
PCPS-SOP-008	An implementation MAY prevent the 1-to-1 PoC Participants from hearing the previous session communications during the entire 1-to-1 PoC Session.	PCPS V1.0
PCPS-SOP-009	The PoC User participation in the first PoC Session SHALL be suspended (i.e. the PoC User SHALL NOT be able to hear/transmit any talk bursts from/to the first PoC Session) while the PoC User is engaged in the second PoC Session, and SHALL be automatically resumed when the second PoC Session is terminated, provided that the other PoC Session has not been terminated in the meantime.	PCPS V1.0
PCPS-SOP-010	The PoC group participant information MAY be updated, when the first session is suspended and again when it is resumed.	PCPS V1.0
PCPS-SOP-011	PoC Participant SHALL be able to receive 1-to-1 PoC Sessions while taking part in a PoC Session.	PCPS V1.0
PCPS-SOP-012	PoC Participant SHALL be able to control the automatic acceptance of 1-to-1 PoC Sessions while in a PoC Session.	PCPS V1.0

Table 62: High-Level Separate 1-1 PoC Session while Having a PoC Session Requirements

6.1.34 System Elements

This section contains the high level requirements with respect to System Elements of the PCPS enabler.

These requirements describe the basic functionality required by each of the identified system elements supporting PoC. The PoC Client interacts with the PoC application service infrastructure to establish PoC Sessions.

Informational Note: The requirements in this section do not assume any PoC architecture in particular. The intention is to capture requirements on the functionality related to the PoC Client and service infrastructure. Actual system elements are not specified.

Label	Description	PCPS Release
General		
PCPS-SEL-001	The PoC application service infrastructure SHALL coordinate a reliable half-duplex PoC Session initiated by the PoC Session originator and other PoC Participant(s).	PCPS V1.0
User Equipment		

PCPS-SEL-002	The PoC enabled User Equipment (UE) SHALL support functions to set up the PoC Session, and request the floor and release the floor.	PCPS V1.0
PCPS-SEL-003	The PoC UE SHALL support a function to manually exit the PoC Session.	PCPS V1.0
PCPS-SEL-004	PoC UE SHALL support functions (e.g. tones) to announce an incoming PoC Session, and to properly arbitrate the use of the Half Duplex PoC Session (e.g. talk-proceed, floor open, floor rejected).	PCPS V1.0
PoC Client		
PCPS-SEL-005	The PoC Client SHALL be able to allow PoC Session initiation, (e.g. codec negotiation), participation (e.g., talk or listen), and termination.	PCPS V1.0
PCPS-SEL-006	The PoC Client SHALL be able to perform registration with the PoC Application Service Infrastructure.	PCPS V1.0
PCPS-SEL-007	The PoC Client SHALL be able to participate in authentication with the PoC Application Service Infrastructure.	PCPS V1.0
PCPS-SEL-008	The PoC Client SHALL be able to provide access to PoC user(s) for different PoC Group Lists in the PoC Application Service Infrastructure (e.g. contact lists, Group Lists).	PCPS V1.0
PCPS-SEL-009	The PoC Client SHALL be able to generate talk bursts for transmission when the PoC function is invoked and reproduce received talk bursts when the PoC function is not invoked.	PCPS V1.0
PCPS-SEL-010	The PoC Client SHALL be able to support Floor Control procedures (e.g. make requests and respond to commands).	PCPS V1.0
PCPS-SEL-011	The PoC Client SHALL be able to incorporate PoC configuration data downloaded by the PoC Application Service Infrastructure (e.g. over-the-air activation).	PCPS V1.0
PCPS-SEL-012	The PoC Client MAY provide access to PoC Subscriber for managing PoC Group Lists.	PCPS V1.0
PCPS-SEL-013	The PoC Client MAY provide access to PoC Service Entity on Presence conditions of the PoC User.	PCPS V1.0
PoC Application Service Infrastructure		
PCPS-SEL-014	The PoC Application Service Infrastructure SHALL be able to support session initiation requests from PoC Clients.	PCPS V1.0
PCPS-SEL-015	The PoC Application Service Infrastructure SHALL be able to allow participation in and termination of PoC Sessions.	PCPS V1.0
PCPS-SEL-016	The PoC Application Service Infrastructure SHALL be able to service registration requests from PoC Clients.	PCPS V1.0
PCPS-SEL-017	The PoC Application Service Infrastructure SHALL be able to participate in authentication with PoC Clients	PCPS V1.0
PCPS-SEL-018	The PoC Application Service Infrastructure SHALL be able to negotiate the capabilities of the PoC Client to be used in the PoC Session.	PCPS V1.0
PCPS-SEL-019	The PoC Application Service Infrastructure SHALL be able to allow PoC Clients to access different PoC Group Lists (e.g. contact lists or Group Lists.	PCPS V1.0
PCPS-SEL-020	The PoC Application Service Infrastructure SHALL be able to forward talk bursts from the speaker towards designated PoC Clients.	PCPS V1.0
PCPS-SEL-021	The PoC Application Service Infrastructure SHALL be able to support Floor Control.	PCPS V1.0

PCPS-SEL-022	The PoC Application Service Infrastructure SHALL be able to dynamically add and remove PoC Group Members during an active PoC Session.	PCPS V1.0
PCPS-SEL-023	The PoC Application Service Infrastructure SHALL be able to generate CDRs.	PCPS V1.0
PCPS-SEL-024	The PoC Application Service Infrastructure SHALL be able to control access to the PoC Session.	PCPS V1.0
PCPS-SEL-025	The PoC Application Service Infrastructure SHALL be able to support Lawful Interception.	PCPS V1.0
PCPS-SEL-026	The PoC Application Service Infrastructure SHALL be able to perform authorization of PoC Clients.	PCPS V1.0
PCPS-SEL-027	The PoC Application Service Infrastructure SHALL be able to provision PoC service parameters (and user profiles, etc.) for PoC Users.	PCPS V1.0
PCPS-SEL-028	The PoC Application Service Infrastructure SHALL be able to store and access PoC Group Membership information	PCPS V1.0
PCPS-SEL-029	The PoC Application Service Infrastructure MAY be able to allow the PoC Client to manage lists.	PCPS V1.0
PCPS-SEL-030	The PoC Application Service Infrastructure MAY be able to provide a means to inform PoC Users of the presence and availability of group members.	PCPS V1.0
PCPS-SEL-031	The PoC Application Service Infrastructure MAY be able to interact with other service enabling platforms.	PCPS V1.0

Table 63: High-Level Functional Requirements – System Elements

6.1.35 Network Interfaces

This section contains the high level requirements with respect to Network Interfaces of the PCPS enabler.

6.1.35.1 Interface between PoC Client and PoC Application Service Infrastructure

Label	Description	PCPS Release
PCPS-NET-001	The interface between the PoC Client and PoC Application Service Infrastructure SHALL be supported by Mobile Packet Switched Data Networks (e.g. those defined by 3GPP and 3GPP2).	PCPS V1.0
PCPS-NET-002	The interface between the PoC Client and PoC Application Service Infrastructure SHALL support secure transportation of PoC talk-bursts.	PCPS V1.0
PCPS-NET-003	The interface between the PoC Client and PoC Application Service Infrastructure SHALL support secure signalling and communication connections.	PCPS V1.0
PCPS-NET-004	The interface between the PoC Client and PoC Application Service Infrastructure SHALL support the requirements of performance related signalling protocols (e.g. Floor Control).	PCPS V1.0
PCPS-NET-005	The interface between the PoC Client and PoC Application Service Infrastructure SHALL support functions related to PoC Session initiation, registration, participation and termination.	PCPS V1.0
PCPS-NET-006	The interface between the PoC Client and PoC Application Service Infrastructure SHALL support authentication of PoC Clients/PoC Application Service Infrastructure.	PCPS V1.0
PCPS-NET-007	The interface between the PoC Client and PoC Application Service Infrastructure SHALL support authorization of PoC Clients.	PCPS V1.0

PCPS-NET-008	The interface between the PoC Client and PoC Application Service Infrastructure SHALL support administration interface to allow PoC Subscribers to update PoC Group Lists and contacts lists	PCPS V1.0
PCPS-NET-009	The interface between the PoC Client and PoC Application Service Infrastructure SHALL support secure provisioning of PoC service parameters and features.	PCPS V1.0

Table 64: Interface between PoC Client and PoC Application Service Infrastructure

6.1.35.2 Interface between PoC Application Service Infrastructure and Presence Enabler

Label	Description	PCPS Release
PCPS-NTP-001	An interface between the PoC application service infrastructure and a Presence service enabler MAY be provided to inform PoC Participants of the presence and availability of PoC Group Members.	PCPS V1.0
PCPS-NTP-002	To support the requirements for Presence features, capabilities common to other OMA service enablers SHALL be leveraged, where possible and appropriate, to provide a unified experience to the PoC User.	PCPS V1.0

Table 65: Interface between PoC Application Service Infrastructure and Presence Enabler

6.1.35.3 Interface between PoC Application Service Infrastructure and OAM&P

Label	Description	PCPS Release
PCPS-NTO-001	The PoC application service infrastructure SHOULD be able to utilize standards based interface capabilities that allow integration with the service provider's Operations, Administration, Management and Provisioning (OAM&P) systems.	PCPS V1.0

Table 66: Interface between PoC Application Service Infrastructure and OAM&P

6.1.35.4 Interface between PoC Application Service Infrastructures in Different Service Provider Domains

Label	Description	PCPS Release
PCPS-NTD-001	The PoC application service infrastructure SHALL be able to connect to PoC application service infrastructures in different service provider domains.	PCPS V1.0

Table 67: Interface between PoC Application Service Infrastructures in Different Service Provider Domains

6.1.35.5 Interface between PoC Application Service Infrastructure and Law Enforcement Agency

Label	Description	PCPS Release
PCPS-NTL-001	Access to intercepted PoC communications SHALL be possible, as required by law enforcement agencies.	PCPS V1.0

Table 68: Interface between PoC Application Service Infrastructure and Law Enforcement Agency

6.1.35.6 Interface between PoC Application Service Infrastructure and PoC Group/List Management

Label	Description	PCPS Release
PCPS-NTG-001	To support the requirements for PoC Group/List Management, capabilities common to other OMA service enablers SHALL be leveraged, where possible and appropriate, to provide a unified experience to the PoC Subscriber	PCPS V1.0

Table 69: Interface between PoC Application Service Infrastructure and PoC Group/List Management

6.1.36 Security

This section contains the high level requirements for security functionality of the PCPS enabler.

Label	Description	PCPS Release
Functionality		
PCPS-SEC-001	Prior to any PoC service interactions (e.g. PoC administration & configuration, PoC Sessions) the PoC Service Entity and the PoC Subscriber or PoC User SHALL be mutually authenticated.	PCPS V1.0
PCPS-SEC-002	The speech communication and signalling in PoC Sessions SHALL be transported in a secure manner.	PCPS V1.0
PCPS-SEC-003	The PoC Service Entity SHOULD be able to log the information about any PoC interactions.	PCPS V1.0
PCPS-SEC-004	The PoC Service Enabler SHALL ensure integrity of PoC signalling.	PCPS V1.0

Table 70: Security

6.1.36.1 Multicast/Broadcast Security

This section contains the high level requirements for Multicast / Broadcast Security for the PCPS Service Enabler

Multicast/Broadcast security should be taken into account for PoC service.

Label	Description	PCPS Release
PCPS-MSE-001	PoC Service Infrastructure SHALL support multicast/broadcast security, for example, to guarantee that any one of PoC service members could not access ongoing PoC service any longer after she/he leaves the PoC group, and to prevent those new members from receiving the previous PoC service.	PCPS V1.0

Table 71: PoC Service Multicast/Broadcast Security

6.1.36.2 Interworking Service Security

This section contains the high level requirements for Security of the Interworking Service for the PCPS enabler.

PoC Service Infrastructure has to have a trusted relationship with PoC Interworking functions, even when these are in a different domain.

Label	Description	PCPS Release
PCPS-ISE-001	PoC Service Infrastructure SHALL support the PoC interworking security functionality in case interworking is supported.	PCPS V1.0

PCPS-ISE-002	The trust relationship between the PoC interworking function and the PoC Server SHALL be aligned with the trust relationship between PoC Servers.	PCPS V1.0
PCPS-ISE-003	The PoC Remote Access user SHALL have the same level security as the PCPS V1.0 Services provided to the PoC Client through the PoC interworking function.	PCPS V1.0

Table 72: Interworking Service Security

6.1.37 Charging

6.1.37.1 General Charging Requirements

This section specifies PoC Service Enabler requirements for charging including the requirements to provide the capabilities for different charging mechanisms and methods. These methods are based on different subscriptions, traffic types, number of Participants, roles of Participants, Media Type, etc.

Label	Description	PCPS Release
Conditionality		
PCPS-CHR-001	The PoC Service Infrastructure SHALL be able to collect sufficient information needed for charging, both types of PoC Subscribers (prepaid and post-paid PoC Subscribers).	PCPS V1.0
Functionality		
PCPS-CHR-002	The PoC Service Infrastructure SHALL support sufficient mechanisms to allow various forms of charging.	PCPS V1.0
Subscription-based Charing		
PCPS-CHR-003	Charging information SHOULD include the PoC Subscriber status relative to PoC subscription, i.e. PoC subscribed, PoC unsubscribed, PoC subscription suspended or temporarily barred (by the service provider).	PCPS V1.0
PCPS-CHR-004	Charging information SHOULD include the PoC Subscriber type and QoE profile.	PCPS V1.0
PCPS-CHR-005	Charging information SHOULD include the identity and type of each PoC Group in which the PoC Subscriber participates.	PCPS V1.0
PCPS-CHR-006	Charging information SHOULD include the maximum size of each PoC Group (i.e., maximum number of Participants who joined the PoC Session, regardless of having spoken or not) in which the PoC Subscriber has participated within a defined period (as configured by the PoC Service Provider). This MUST consider any kind of PoC Group and Session (Dynamic Groups, Simultaneous PoC Group Sessions, etc).	PCPS V1.0
Traffic-based Charing		
PCPS-CHR-007	Charging information SHOULD include Separate Charging Data Records (CDR) generated for originator and terminator of each PoC Session.	PCPS V1.0
PCPS-CHR-008	Charging information SHOULD include the PoC service interactions (e.g., special rights or roles, join a PoC Group Session, leave a PoC Group Session, administer PoC Groups, etc).	PCPS V1.0
PCPS-CHR-009	Charging information SHOULD include the Number of sessions initiated, i.e. successful attempts.	PCPS V1.0
PCPS-CHR-010	Charging information SHOULD include the Type of PoC session.	PCPS V1.0

PCPS-CHR-011	Charging information SHOULD include the QoE profile for each PoC Session initiation (QoS and priority).	PCPS V1.0
PCPS-CHR-012	Charging information SHOULD include the Number of failed session attempts, with time stamps of failed attempts.	PCPS V1.0
PCPS-CHR-013	Charging information SHOULD include number and type of Participants in each PoC Session, including their identities and the identity and type of the PoC Group (if applicable). Also considering the special case of non-human Participant (PoC Box, etc)	PCPS V1.0
PCPS-CHR-014	Charging information SHOULD include the duration of a session, with start and finish time stamps.	PCPS V1.0
PCPS-CHR-015	Charging information SHOULD include the type of IP address used for downlink in the PoC Session (unicast vs. multicast)	PCPS V1.0
PCPS-CHR-016	Charging information SHOULD include the number and types of media exchanged in the PoC Session.	PCPS V1.0
PCPS-CHR-017	For each Media Type exchanged, charging information SHOULD include the duration of transmit time for the media in the PoC Session (i.e., total time periods for all Media Bursts by a PoC Subscriber).	PCPS V1.0
PCPS-CHR-018	For each Media Type exchanged, charging information SHOULD include the number of Media Bursts transmitted.	PCPS V1.0
PCPS-CHR-019	Charging information SHOULD include the Number of “ready-to-speak” request granted.	PCPS V1.0
PCPS-CHR-020	For each Media Type exchanged, charging information SHOULD include the volume of data (e.g., Media packets, bytes).	PCPS V1.0
PCPS-CHR-021	For each Media Type exchanged, charging information SHOULD include the codification used.	PCPS V1.0
General		
PCPS-CHR-022	Charging information SHOULD support CDRs for the underlying packet connectivity resource to indicate that the connectivity session is being used for PoC.	PCPS V1.0
PCPS-CHR-023	Charging information SHOULD indicate the underlying QoS provided (BW, QoS class, etc).PoC charging information SHALL support charging correlation.	PCPS V1.0
PCPS-CHR-024	Latency SHOULD be a time-based value captured as part of the CDR. **Informational Note:** This would allow service providers to define their own thresholds for unacceptable latency (e.g. for operational performance measurements).	PCPS V1.0
PCPS-CHR-025	The PoC Service Entity SHALL provide records for failed delivery of talk bursts.	PCPS V1.0
PCPS-CHR-026	CDRs for traffic generated by each active PoC group participant individually SHALL be available.	PCPS V1.0
PCPS-CHR-027	The PoC Service Provider SHALL have the ability to charge based on multiple PoC Clients having the same PoC Address.	PCPS V1.0
PCPS-CHR-028	If the PoC Service Infrastructure supports adding media content to PoC Session invitations or Group Advertisement messages, then it SHALL be possible to charge the Inviting PoC Client and the Invited PoC Client for Media in Requests based on PoC Service Providers charging model.	PCPS V1.0
PCPS-CHR-029	The PoC Server SHALL be able to charge according to the QoE actually provided in each PoC Session.	PCPS V1.0

Table 73: High Level General Charging Requirements

6.1.37.2 Roaming and Inter-provider Charging Requirements

This section contains the high level requirements for Roaming and Inter-provider Charging of the PCPS enabler.

Label	Description	PCPS Release
Charging Requirements for Roaming Users		
PCPS-RCH-001	It SHALL be possible for Services Providers to ascertain the usage of the PoC Service Entity by PoC Users who are roaming. **Informational Note:** PoC is intended to be used at the home network, i.e. the network with which the subscription is held, when roaming and across networks.	PCPS V1.0
PCPS-RCH-002	CDRs SHALL be made available both for usage of data connections and usage of the PoC Service Entity for roaming situations.	PCPS V1.0
Charging Requirements for Inter-provider Accounting		
PCPS-RCH-003	It SHALL be possible for Service Providers to ascertain the usage of the PoC Service Entity by PoC Users to an interconnected network.	PCPS V1.0
PCPS-RCH-004	CDRs SHALL be made available both for usage of data connections and usage of the PoC Service Entity for interconnect situations.	PCPS V1.0

Table 74: Roaming and Inter-provider Charging Requirements

6.1.37.3 Network Domain Based Charging

This section contains the high level requirements for Network Domain Based Charging of the PCPS Service Enabler.

When a PoC User invites other PoC User(s) who is in a different country, region and/or PoC Network the PoC Service Provider needs to charge its PoC User differently.

Label	Description	PCPS Release
Conditionality		
PCPS-NDC-001	The PoC Service Infrastructure SHALL be able to collect network domain based charging information.	PCPS V1.0
Functionality		
PCPS-NDC-002	It SHALL be possible for a PoC Service Provider to charge its PoC User differently depending on PoC Address information of the inviting and invited PoC User(s) and/or information such as country, region and/or PoC Network of the inviting and Invited PoC User(s).	PCPS V1.0

Table 75: Network Domain Based Charging

6.1.37.4 Interworking Service Charging

This section contains the high level requirements for Interworking Service Charging of the PCPS Service Enabler.

PoC Interworking Service provides charging information. The PoC V1.0 charging principles applies to the PoC Interworking service.

Label	Description	PCPS Release
Conditionality		
PCPS-IWC-001	The PoC Service Infrastructure SHALL support PoC interworking service charging, in case interworking is supported.	PCPS V1.0

Functionality		
PCPS-IWC-002	It SHALL be possible for PoC Service Providers to ascertain the usage of the PoC Service Entity by PoC Subscribers accessing remotely the PoC Service.	PCPS V1.0
PCPS-IWC-003	Chargeable Events in PoC Service SHALL also indicate PoC Remote Access usage.	PCPS V1.0
PCPS-IWC-004	It SHALL be possible for PoC Service Providers to ascertain the usage of the PoC Service Entity by External P2T Network users accessing the PoC Service from an External P2T Networks using a PoC interworking function.	PCPS V1.0
PCPS-IWC-005	Chargeable Events in PoC Service SHALL also indicate PoC interworking usage.	PCPS V1.0

Table 76: PoC Interworking Service Charging

6.2 Overall System Requirements

This section contains the Overall System Requirements for the PCPS enabler.

The general network attributes and behaviors specified in this chapter are supported in the PoC architecture design.

Label	Description	PCPS Release
Open Interfaces		
PCPS-SYS-001	Interfaces to the PoC service entities SHALL make use of open standards. Specifically, it SHALL be possible to make use of relevant network interface standards from 3GPP and 3GPP2.	PCPS V1.0
Interoperability between PoC Service Providers & Service Entities		
PCPS-SYS-002	It SHALL be possible for PoC Participants to seamlessly interact with each other within a PoC Session (i.e. 1-to-1 and group sessions) regardless of their PoC Service Providers.	PCPS V1.0
PCPS-SYS-003	PoC Users SHALL be able to seamlessly utilise PoC features involving other PoC Users regardless of their PoC Service Provider. **Informational Note:** For example, a PoC Group Session served by one service provider's PoC Service Entity may include PoC Participants who are Subscribers of another PoC Service Provider.	PCPS V1.0
PCPS-SYS-004	An appropriate interface SHOULD be provided between the PoC service entities of different PoC Service Providers that are interconnected to allow the service providers to manage the set-up, monitoring, maintenance and termination of PoC Sessions and PoC groups regardless of the PoC Participant's PoC Service Provider.	PCPS V1.0
Inter-working with Fixed Connections		
PCPS-SYS-005	PoC Service Entity MAY inter-work with the fixed IP network Instant Messaging (IM) services with enhanced streaming audio functionality. **Informational Note:** This may enable a substantial extension to PoC coverage for both PoC and IM users. **Informational Note:** However, PoC inter-working with traditional voice services (whether implemented on circuit switched or packet switched technology) is out-of-scope. Protocols to support such inter-working are not part of the PoC features.	PCPS V1.0
Cross Services Interoperability		

PCPS-SYS-006	PoC Service Entity MAY inter-work with other standalone and/or integrated messaging services. **Informational Note:** For example, protocols to support such inter-working are not part of the PoC feature, although messaging services may create such inter-working by adding the necessary PoC protocols and interfaces. For interworking requirements related to PoC systems see section [6.1.15 PCPS Interworking Service].	PCPS V1.0
Interaction with Circuit Switched Call Mode Residing on the Terminal		
PCPS-SYS-007	To maintain usability of services when collocated on a terminal, some means for the user to change between these service modes SHALL be possible, which may involve both the PoC Service Entity and/or the client: • If a CS call is ongoing, any incoming PoC session SHOULD be indicated. • If a PoC Session is ongoing, any incoming CS call SHOULD initiate alerting. • The PoC User SHOULD be able to switch between CS and PoC Sessions if needed, maintaining session context for the non-active call/session **Informational Note:** It is highly probable that a PoC service will be added to a mobile terminal capable of Circuit Switched (CS) voice communications. In this case, both the PoC service and CS voice service modes are collocated in the terminal, but inter-working between these services is not in scope of this enabler.	PCPS V1.0
Roaming Service Support		
PCPS-SYS-008	A PoC User while roaming SHALL be able to access the PoC service (e.g. initiate or respond to a PoC Session request) either as an individual or a PoC Group Session participant.	PCPS V1.0
PCPS-SYS-009	The visited network SHALL be "transparent" and provide unrestricted PoC User access to his home network PoC service. The PoC User SHOULD be able to access all the features of his normal home based PoC service.	PCPS V1.0
PCPS-SYS-010	It SHALL be possible to limit some PoC capabilities, while a PoC User is roaming, by the PoC subscriber's preferences or through PoC Service Provider provisioning (e.g. 1-to-separate PoC Session or multiple group operation may be restricted).	PCPS V1.0
Presence Feature Settings		
PCPS-SYS-011	If Presence features are supported by the PoC Service Entity, a PoC User SHALL be able to indicate his Presence conditions (e.g. Do-Not-Disturb or Unavailable). **Informational Note:** Consistent with section [6.1.22 Presence Requirements] and section [6.1.35.2 Interface between PoC Application Service Infrastructure and Presence Enabler] interworking between Presence services (as part of PoC service features) and traditional voice services is out-of-scope. Protocols to support such inter-working are not part of the PoC features.	PCPS V1.0

Table 77: 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 OMA-RD-PCPS-V1_0	19 Dec 2013	All	Baseline as agreed in: OMA-COM-PCPS-2013-0003-INP_PCPS_V1.0_RD_Baseline
	10 Mar 2014	Section 6.1	Added requirements per agreed CR: 2014-0009R01-CR_RD_PCPS_1.0_HLF_Reqs
		Section 6.1	Added requirements per agreed CR: 2014-0010-CR_One_to_One_Com_Reqs
		Section 6.1	Added requirements per agreed CR: 2014-0011R01-CR_RD_PCPS_1.0_One_to_Many_Com_Reqs
		Section 6.1	Added requirements per agreed CR: 2014-0012R01-CR_RD_PCPS_1.0_Personal_Alert_Reqs
		Section 6.1	Added requirements per agreed CR: 2014-0013R01-CR_RD_PCPS_1.0_Session_Setup_Reqs
		Section 6.1	Added requirements per agreed CR: 2014-0014R01-CR_RD_PCPS_1.0_Communication_Reqs
		Section 6.1	Added requirements per agreed CR: 2014-0015R01-CR_RD_PCPS_1.0_Management_Reqs
		Section 6.1	Added requirements per agreed CR: 2014-0016R01-CR_RD_PCPS_1.0_Usability_Reqs
		Section 6.1	Added requirements per agreed CR: 2014-0021R01-CR_RD_PCPS_1.0_Media_Type_Reqs
		Section 6.1	Added requirements per agreed CR: 2014-0022-CR_RD_PCPS_1.0_Multiple_Group_Reqs
		Section 6.1	Added requirements per agreed CR: 2014-0023R02-CR_RD_PCPS_1.0_Enh_Session_Estab_Reqs
		Section 6.1	Added requirements per agreed CR: 2014-0024R01-CR_RD_PCPS_1.0_Enh_Session_Control_Reqs
		Section 6.1	Added requirements per agreed CR: 2014-0025R01-CR_RD_PCPS_1.0_Media_Burst_Control_Reqs
		Section 6.1	Added requirements per agreed CR: 2014-0026-CR_RD_PCPS_1.0_Multicast_Broadcast_Reqs
		Section 6.1	Added requirements per agreed CR: 2014-0028R01-CR_RD_PCPS_1.0_Security_Reqs
		Section 6.1	Added requirements per agreed CR: 2014-0029R02-CR_RD_PCPS_1.0_Charging_Reqs
		Section 6.1	Added requirements per agreed CR: 2014-0031R01-CR_RD_PCPS_1.0_Performance_Reqs
		Section 6.1	Added requirements per agreed CR: 2014-0032R01-CR_RD_PCPS_1.0_QoE_Reqs
		Section 6.1	Added requirements per agreed CR: 2014-0033R01-CR_RD_PCPS_1.0_Interworking_Reqs
		Section 6.1	Added requirements per agreed CR: 2014-0034R01-CR_RD_PCPS_1.0_Media_Burst_Storage_Reqs
		Section 6.1	Added requirements per agreed CR: 2014-0035R01-CR_RD_PCPS_1.0_Dispatcher_Reqs
		Section 6.1	Added requirements per agreed CR: 0036R02-CR_RD_PCPS_1.0_Additional_Services_Reqs

Document Identifier	Date	Sections	Description
	20 Mar 2014	Appendix C	Added requirements per agreed CR: 2014-0041R04-CR_Unrealized_PoC_Requirements_for_Multiple_PoC_Groups_and_Enhanced_PoC_Sessions
		Appendix C	Added requirements per agreed CR: 2014-0043R01-CR_Unrealized_Requirements_InvResv_PoCBox_EnPoCSessionCtl
		Appendix C	Added requirements per agreed CR: 2014-0044R01-CR_Unrealized_Requirements_Dispatch_MBC_Enhancements
		Appendix C	Added requirements per agreed CR: 2014-0045R01-CR_Unrealized_Requirements_XDM_Presence_interactions_interworking_Service
		Appendix C	Added requirements per agreed CR: 2014-0046R01-CR_Unrealized_Requirements_on_VAS_Usability_and_others
	02 Apr 2014	Appendix C	Added requirements per agreed CR: 2014-0054-CR_RD_PCPS_1.0_Appendix_Req_Source_Info
	18 Apr 2014	Section 6.1	Added requirements per agreed CR: 2014-0017R01-CR_RD_PCPS_1.0_Operational_Reqs
		Section 6.1	Added requirements per agreed CR: 2014-0018-CR_RD_PCPS_1.0_Presence_Reqs
		Section 6.1	Added requirements per agreed CR: 2014-0019R01-CR_RD_PCPS_1.0_System_Element_Reqs
		Section 6.1	Added requirements per agreed CR: 2014-0020R01-CR_RD_PCPS_1.0_Network_Interface_Reqs
		Section 6.2	Added requirements per agreed CR: 2014-0037R01-CR_RD_PCPS_1.0_Overall_System_Reqs
		Section 6.1	Added requirements per agreed CR: 2014-0055R01-CR_CR_RD_PCPS_1.0_Reqs_for_dynamic_PoC_groups
		Section 6.1	Added requirements per agreed CR: 2014-0056R02-CR_RD_PCPS_1.0_Reqs_for_Multiple_PoC_Clients_with_the_Same_PoC_Address
		Section 6.1	Added requirements per agreed CR: 2014-0061R01-CR_RD_PCPS_1.0_Multiple_Group_Reqs
		Section 6.1	Added requirements per agreed CR: 2014-0063-CR_RD_PCPS_1.0_Operational_Reqs_Identity_Contacts
		Section 6.1	Added requirements per agreed CR: 0064-CR_RD_PCPS_1.0_Additional_Operational_Reqs
		Appendix E	Added requirements per agreed CR: 2014-0065R01-CR_Unrealized_requirements_from_PoC_V1.0
		Section 6.1	Added requirements per agreed CR: 2014-0069-CR_RD_PCPS_1.0_Reqs_for_security_privacy_and_LI
		Section 6.1	Added requirements per agreed CR: 2014-0071-CR_RD_PCPS_1.0_Reqs_for_Legacy_and_Enterprise
		Section 6.1	Added requirements per agreed CR: 2014-0072R01-CR_RD_PCPS_1.0_Reqs_for_Duration_of_speaking__and_MAO
		Section 1	Added requirements per agreed CR: 2014-0073R01-CR_RD_PCPS_1.0_Scope_Additions
		Section 2	Added requirements per agreed CR: 2014-0074R01-CR_RD_PCPS_1.0_References
		Section 3	Added requirements per agreed CR: 2014-0075R02-CR_RD_Abbreviations
		Section 3	Added requirements per agreed CR: 2014-0076-CR_RD_Definitions
		Appendix B	Added requirements per agreed CR: 2014-0078-CR_RD_UseCases

Document Identifier	Date	Sections	Description
		Section 6.1	Added requirements per agreed CR: 2014-0079- CR_RD_PCPS_1.0_Service_Provisioning_by_Service_Provider_Reqs
		Section 6.1	Added requirements per agreed CR: 2014-0080-CR_RD_PCPS_1.0_Reqs_for_Charging
		Section 6.1	Added requirements per agreed CR: 2014-0081R01-CR_Performance_Requirements_from_PoC_V1.0
		Section 6.1	Added requirements per agreed CR: 2014-0082-CR_RD_PCPS_1.0_Interoperability_Reqs
		Section 6.1	Added requirements per agreed CR: 2014-0083- CR_RD_PCPS_1.0_Separate_1_to_1_PoC_Session_While_Having_a_PoC_Session_Reqs
		Appendix D	Added requirements per agreed CR: 2014-0084-CR_RD_GroupsOverview
		Appendix C	Added requirements per agreed CR: 2014-0085-CR_RD_TerminalUI
	23 Apr 2014	All sections	Minor editorial changes: corrected table numbering, section numbering, removed template comments, updated version history, general cleanup
	28 Apr 2014	Section 6.1	Added requirements per agreed CR: 2014-0086-CR_RD_LawfulIntercept
		Section 6.1	Added requirements per agreed CR: 2014-0087R02-CR_RD_PCPS_1.0_Charging_Reqs.doc
		Appendix C	Added requirements per agreed CR: 2014-0088R01-CR_RD_User_Experience
		Section 6.1	Added requirements per agreed CR: 2014-0089R01-CR_Merged_Usability_requirements_section
		Section 6.1	Added requirements per agreed CR: 2014-0090-CR_RD_PCPS_1.0_Performance_Consolidation
		All sections	Editorial changes: corrected table numbering, section numbering, generated a more detailed table of contents to include Heading 4, updated version history, general cleanup prior to review
	14 Jul 2014	All sections	All issue resolutions (#1-184) from 20140714RDRR resolved and included in this version, except for issue # A024. Issue A024 removes last two columns from section 6. This version of RD is produced to aid in reviewing. Without issue A024 included, it is much easier to review document for individual changes. Once resolution of A024 is included then all tables in Normative Section 6 are marked as "modified" and individual changes are no longer evident. Next version of RD will include resolution of issue A024, as well as any issues found during company review. The following agreed CRs are included in this version: PCPS-2014-0111R01, PCPS-2014-0112R02, PCPS-2014-0114R01, PCPS-2014-0116R01, PCPS-2014-0118R01, PCPS-2014-0120R03, PCPS-2014-0136R01, PCPS-2014-0137R01, PCPS-2014-0139R01, PCPS-2014-0105R01. Next version 20140722-D is for candidate approval.
	22 Jul 2014	All sections	Issue # A024 is included, as well as minor editorial changes, also corrected resolution of issue # A061: PCPS-SSP-010, PCPS-PER-006, PCPS-OPR-009, PCPS-OPR-010, and B.1.5 Step 2 in the second set of instructions. All issues closed and resolutions included from 20140721RDRR. This version is for candidate approval.
Candidate Version OMA-RD-PCPS-V1_0	12 Aug 2014	n/a	Status changed to Candidate by TP TP Ref # OMA-TP-2014-0163- INP_PCPS_V1_0_RD_for_Candidate_Approval
Draft Version OMA-RD-PCPS-V1_0	21 Nov 2014	Section 6.1.21.1	Issue A001 from CONRR is resolved in this version. No open requirements comments from CONR exist. This version is for candidate approval.
Candidate Version OMA-RD-PCPS-V1_0	20 Feb 2015	n/a	Status changed to Candidate by TP TP Ref # OMA-TP-2015-0062- INP_PCPS_V1_0_ERP_and_ETR_for_Candidate_Approval

Appendix B. Use Cases (Informative)

The following are a collection of PoC use cases that are considered to represent a good basis for requirements derivation.

These use cases were collected from [OMA PoC RD 1.0] and [OMA PoC RD 2.1] and remain unchanged.

B.1 "SHOPPING LIKE CRAZY"

B.1.1 Short Description

This subclause provides the prose description of the basic PoC service from the beginning to the end.

- A group of people shopping together decided to keep in touch with each other using a PoC service to inform on the most challenging bargains. Therefore, one of them, Mary, requests the PoC Service Provider to set-up the PoC service for them.
- As soon as the PoC Service Provider has set up the service, all the invited people get an indication on their terminal, asking whether they would accept the service. This service invitation contains the name of the inviting host (Mary) as well as the name of the group: "*SHOPPING LIKE CRAZY*". In addition, the PoC Service Provider has relayed the right to accept additional participants to Mary.
- Most of the invited people accept the service offer, becoming participants in the PoC group. However some do not accept, since they have other preferences.
- In the department store they meet another friend who would like to join. Being given the name of the group he sends a request to Mary to join the group. Mary allows him to join.
- Susie suddenly discovers an extremely cheap shoe shop, which she simply has to tell her friends of. So she pushes the talk button.
- As someone is speaking right now and Manfred had pushed the button before, Susie's Request-to-Speak is queued.
- Hearing Manfred talk, Susie realizes that Manfred is already talking about this shoe shop. So she cancels her Request-to-Speak. Alternatively, after Manfred had finished speaking, Susie would have received an indication, that she is now "*on air*".
- The voice is immediately distributed to the other participants. For the listeners, when they are ready to listen, their terminals receive the voice of the speaker without prior indication.
- One of the participants receives an incoming phone call. As determined by the preferences of the owner, the phone switches to "*not ready to listen*" mode of the PoC service. In this mode the PoC service silently continues in the background, after the end of the phone call the participant decides to return to listening to the PoC service.
- After a while Manfred gets bored with all this gossip and decides to leave the PoC group. He simply sends the unregister-request indication to the PoC service. The rest of the participants get an indication that Manfred has left the PoC group.

B.1.2 Actors

- PoC Participants: Susie, Manfred and others are acting as participants.
- PoC Host: Mary is acting as the host:
- PoC Group Member: PoC User who has been added to the group, may or may not be PoC Participant
- Service provider

B.1.2.1 Actor Specific Issues

PoC Participants

- Want to be able to communicate quickly using voice
- Want easy to use handsets
- Want good voice quality

PoC Host:

- Want to be able to control the PoC group

Service Provider

- Wants to attract corporate customers to new infrastructure
- Wants to maximise potential for VoIP services

B.1.2.2 Actor Specific Benefits

PoC Participants:

Increased productivity

- Ease and speed of placing voice calls

PoC Host

Takes authority to control and administer the PoC group

Service Provider

Takes revenue from PoC voice calls

B.1.3 Pre-conditions

All PoC group participants are enabled to use the PoC service and using PoC compatible terminals with PoC client.

All PoC group participants have connectivity to PoC Service Provider.

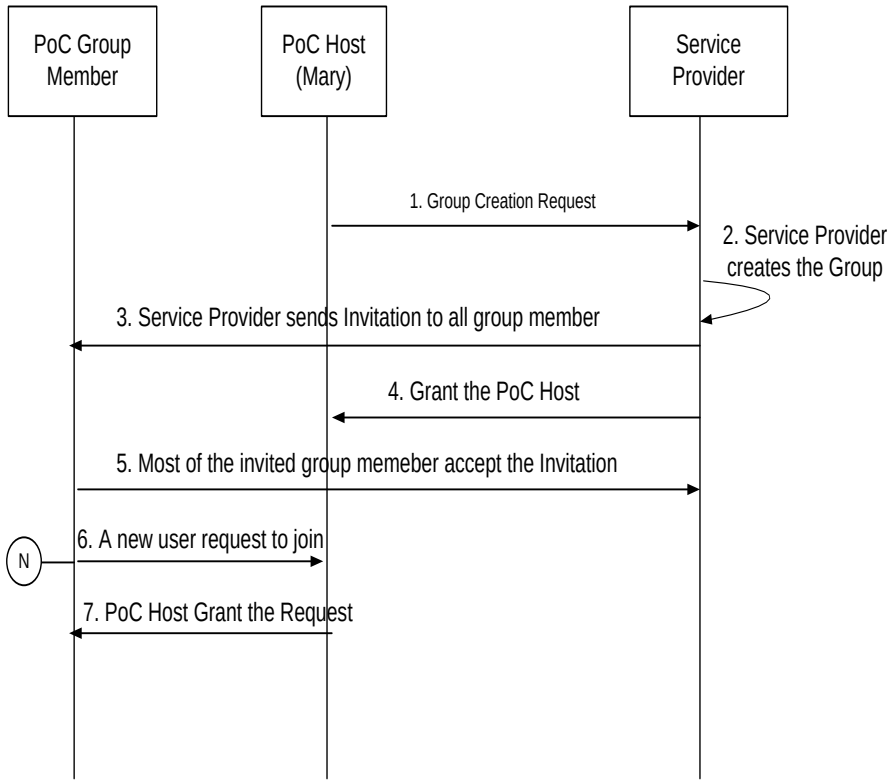
B.1.4 Post-conditions

When the group came to an end, the administrator may unregister all the participants and stop the service for this group. For another group, there is their PoC service running, but, as all the participants have left the service, the administrator may decide to terminate the service. In the both cases, the administrators give back their authority to the PoC Service Provider.

B.1.5 Normal Flow

The following flow provides the prose description of the PoC group creation by a PoC Subscriber.

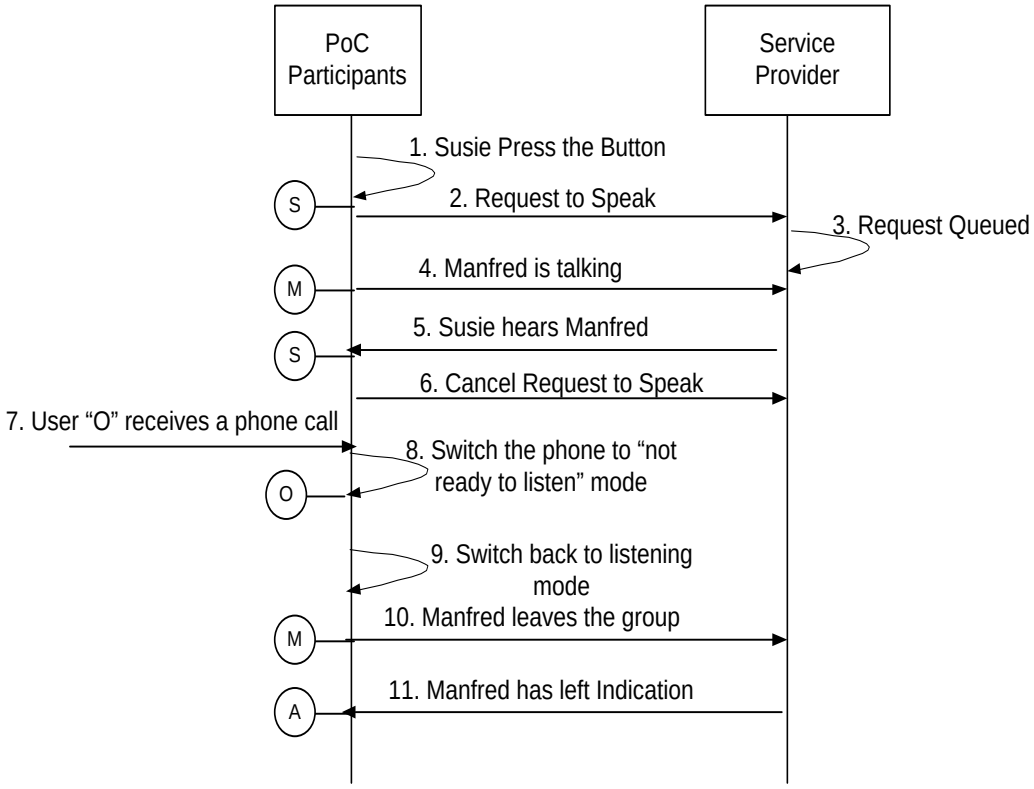
1. A PoC Subscriber (Mary) sends a request to create a PoC Group to the Service Provider.
2. Service Provider creates the group according to the request.
3. Service Provider advertises the PoC group to all the invited group members with the group name and the PoC Host for the group.
4. The Service Provider grants part of the administrative authority to requestor (Mary), so that the requestor becomes PoC Host.
5. Most of the invited group members accept the invitation and become PoC Participant of the group.
6. A new user send a request to PoC Host to join the group
7. PoC Host grants the request to join.



PoC Group Creation

The following flow provides the prose description of the basic PoC service when the user starts speaking and listening.

1. A participant pushes the talk button to request that she would like to speak.
2. The Request-to-Speak indication is sent to the service provider.
3. The network recognises the request by the user and puts the request in a queue since another participant in the group is talking.
4. The other participant speaks.
5. The speaking is delivered to other PoC Participants in the same group.
6. The requestor hears the other participant's speech and decides to cancel her request.
7. Another participant in the group receives a circuit-switched phone call.
8. The participant set his PoC configuration to "not ready to listen" mode.
9. After finishing the CS call, the participant switches his PoC configuration back to listening mode.
10. Another participant decides to leave the group.
11. All the other participants in the group receive an indication that this participant has left the group.



PoC Group talk

B.1.6 Operational and Quality of Experience Requirements

The request-response time by the network and the distribution of the voice message shall be short enough so as not to irritate the users when the users take action to speak and to listen.

B.2 Easy launch PoC service

B.2.1 Short Description

The PoC application can be launched by a user from his terminal in a very efficient and simple way.

B.2.2 Actors

- Participants: Cindy is acting as participants.
- Host: Tom is acting as the host.
- Network operator. A network operator is the organisation, which provides the facility of the telecommunication to the users (subscribers). The network operator is going to provide the users with the Push to Talk service making use of the facility.
- Service provider. A PoC service may, according to the configuration of the network operator, provided by the service provider whose body is different from the network operator. The service is offered through the network operator. Note that, in this sub clause, the distinction between the network operator and the service provider may not be well considered.

B.2.2.1 Actor Specific Issues

Participants

- Want easy to use PoC set up procedure
- Want to add additional information to the active PoC Participants, if available

B.2.2.2 Actor Specific Benefits

Host Tom

Gets additional presence information regarding other Takes authority to control and administer the PoC group

B.2.3 Pre-conditions

In the optional case presence information is used, it is assumed that Tom has rights to view Cindy's presence information and Cindy has presence information available.

Tom's terminal is enabled with additional PoC starting facilities for very easy PoC use.

All PoC group participants are enabled to use the PoC service and using PoC compatible terminals.

B.2.4 Post-conditions

Tom stays up to date with Cindy's presence information.

B.2.5 Normal Flow

- Tom selects his address book, and from the list of his contacts, he may launch immediately a PoC Session via an appropriate menu item in the address book. Tom may be also given the opportunity to add further recipients after having selected Cindy as the first one.
- Optionally, the address book could have been updated automatically with presence information from Cindy; if this information is granted to Tom

B.2.6 Alternative Flow

- An alternative way for Tom to launch a PoC application is by doing it via a dedicated menu entry on the mobile phone's GUI. After launching the application, the user gets his list of participants (buddy list). If feasible, this list could be identical with the address book, with extra presence information where applicable.
- The user should be given the option to launch the application automatically after switching on the terminal. In this case, an IMS registration will be done in the background, ensuring more rapid access to the service.
- It must also be possible for the network to launch the PoC application, in case e.g. of an incoming PoC message or PoC Session invitation and in case the PoC application is not yet running. Launching the application must work both in the case of an existing or a non-existing bearer session with the user. In case a bearer session has not yet been activated, the user shall be asked to approve the bearer session activation.

B.3 Basic user interactions with a PoC terminal

B.3.1 Short Description

In this scenario a PoC User initiates a PoC call to his colleague by pressing a button on his PoC terminal. A system tone informs the user that system resources have been established for his call. The called party (his colleague) can hear the caller's voice on their terminals without a need to answer.

B.3.2 Actors

Participants: Company employees, Alan and Bill

Network Operator

B.3.2.1 Actor Specific Issues

Company employees

- Want to be able to communicate quickly using voice
- Want easy to use handsets
- Want good voice quality

Network Operator

- Wants to attract corporate customers to new infrastructure
- Wants to maximise potential for VoIP services

B.3.2.2 Actor Specific Benefits

Company employees

Increased productivity

- Ease and speed of placing calls

Network Operator

Takes revenue from PoC calls

B.3.3 Pre-conditions

Alan and Bill have PoC capable terminals and PoC service subscriptions.

B.3.4 Post-conditions

Alan and Bill complete their PoC voice communication and end their PoC Session

B.3.5 Normal Flow

Alan and Bill are employees of the same company – a furniture warehouse. Alan works on the warehouse floor and needs to contact his product manager, Bill who works in a different location in the warehouse, to check when the next shipment of a range of chairs will arrive.

1. Alan first chooses the target PoC User that the voice communication will be directed to by scrolling through the list of supported PoC groups and other PoC Users that Alan has defined. He finds "Bill – Product Manager".
2. Alan presses the "Push To Talk" button in order to talk to Bill. An indication on Alan's device (in this example, a confirmation tone) informs Alan that the connection to the PoC system has been set-up; it does NOT necessarily imply that the target user is receiving the voice communication.
3. Alan speaks into his handset and then releases the "Push To Talk" button, and listens for a response from Bill
4. Bill picks up Alan's voice from his handset speakerphone. He presses the "Push To Talk", button on his handset and awaits an indication (in this example a confirmation tone) prior to speaking.
5. This exchange goes on until Alan confirms with Bill the shipment delivery schedule he was after.
6. Alan returns to his PC and updates his records according to Bill's information
7. After a timeout period of inactivity, Alan and Bill's handsets indicate the end of the session (in this example by generating a short tone and displaying the message "*BYE*").
8. Bill notices that he forgot to mention to Alan about the quantity of the next shipment and he presses the "Push To Talk" button on his handset. Alan's name, being the last PoC group or other PoC User that Bill had a PoC Session with stays as the default on the display.

B.3.6 Alternative Flow

As an alternative to step 2 and 4 above, Alan/Bill starts talking immediately after pressing the "Push-to-Talk" button, (i.e. without waiting for an indication to talk).

B.3.7 Operational and Quality of Experience Requirements

- PoC terminals shall be expected to support a physical button that causes an event both when pressed and a separate event when released. This button may be shared with other applications, i.e. it does not have to be a dedicated button exclusively used for PoC.
- PoC terminals should support the capability to scroll through a list displayed on the screen, allow the user to select displayed entities, and shall be able to interoperate with the physical button designated as the PoC button.
- A PoC capable terminals should support the capability to produce audio tones, e.g., to indicate a new PoC call has arrived or an error has occurred

- In-call messages, e.g., tones, system's greetings and other messages, shall be possible during a PoC Session.
- Each PoC User should be identified by an alphanumeric string on the handset.
- The last PoC group or other PoC User with which the PoC User had a PoC Session should remain as the default on the display of the PoC terminal after the session has ended.
- The PoC capable terminal should have a speaker in addition to the earpiece and provide a button for the user to toggle between the two.
- PoC voice calls shall be encrypted
- The request-response time when first establishing a PoC call may be longer than the time taken between listening and talking during an active PoC voice session

B.4 Basic Use Case, "Where to eat"

This is a basic use case, which describes the PoC group call feature. In the example one group member (Julie) initiates a group call by selecting the appropriate group from her PoC terminal and starts talking to other group members. Other members can hear the speech from their terminals without a need to answer. Other group members can take part in the conversation by pressing the POC button and waiting for a permission to speak

B.4.1 Short Description

- Julie wants to have lunch with her workmates and she makes a call to them using PoC.
- She queries whether they would like to go to city, as she is not very fond of the menu at the nearby restaurant where they usually eat.
- Julie first selects the group of people she wants to talk to and presses the Push to talk button.
- After a short while the PoC server will send her a permission to speak notification and she can start talking to the group and all the people in the group will hear her.
- Everybody in the group agrees that the menu at the local restaurant is not very attractive and they reply one-by-one to the group that they agree and would like to go to the city with Julie.

B.4.2 Actors

Primary actors:

Participant: Julie and her workmates from the same company.

B.4.3 Pre-conditions

All parties have PoC capable terminals and PoC service subscriptions.

B.4.4 Post-conditions

Julie has conveyed her message to all parties and they have replied to Julie. All parties have heard all the replies. The group session is still open for further group communications.

B.4.5 Normal Flow

Julie selects the Push to talk application and opens it. There is no group currently active and Julie creates one by selecting the people she wants to talk to from the phonebook in her terminal. She presses POC button and a PoC request is sent to all parties. Julie is given the permission to speak when the first party accepts the request. After that all parties that accept the request are automatically joined to the PoC Group Session and everybody can just push and talk, and no further notifications are sent. Other members can request a reply turn by pressing the POC button. After Julie releases the POC button the first requester is given the permission to speak, others will hear the voice of the first requester.

B.4.6 Alternative Flows

Outward ad hoc group

There is no group currently active and Julie creates one by selecting the people she wants to talk to from the phonebook in her terminal. She presses POC button and a PoC request is sent to all parties. All parties need to answer the request before

Julie is given the permission to speak. After the initial PoC call creation everybody can just push and talk, and no further notifications are sent.

Inward ad hoc group

There is no group currently active and Julie creates one by creating a name to the group and selecting the people she wants to talk to from the phonebook in her terminal. She sends an invitation to the selected people and joins the group she created. Julie is given the permission to speak right after the group is created. When the selected people receive the group information, they can join the group and start using the service immediately. No notifications or alarms are sent after the invitation to join.

Inward permanent group

There is a previously defined "workmates" group and Julie joins it. She is given the permission to speak right after she has joined the group. All people that are active in the group will hear her speak without any notification.

B.5 Private Call - 1-to-1

B.5.1 Short Description

Private call is a half-duplex dispatch audio communications between two users. Allows two users to communicate via Push to Talk (POC) dispatch voice service. A user initiates a private call by selecting/specifying a target mobile user and pushing the Push To Talk (POC) button on the phone. Only one user may speak at a time, arbitrated by the network. The POC Private Calls are typically of much shorter duration than a typical telephony call, and is characterized as having rapid set-up (compared to telephony) and short duration.

B.5.2 Actors

- Participants: Alice and Bob. Alice wishes to call Bob in a 1-to-1 private call, asking Bob if he set-up a technical review meeting.
- Host: In this case, Alice is the invoker of the Private Call.
- Network operator
- Service provider.

B.5.2.1 Actor Specific Issues

Participants

- Want to be able to quickly communicate using voice.
- Want easy to use handsets, with fast methods of selecting users and initiating a call.
- Want to know apriori that the user is reachable before the call.
- Want reasonably good voice quality.

Network Operator:

- Wants to attract customers to new service.
- Wants to reduce subscriber churn to other network Operator.
- Wants to maximise potential for VoIP services, offering new revenue generating service.

B.5.2.2 Actor Specific Benefits

Participants

Better productivity – PoC calls are of quick duration, and gets users back to more productive tasks (vs. waiting for calls, or participating in calls that typically last longer than PoC calls).

- Ease and speed of placing PoC voice calls.

Network Operator

Takes revenue from PoC voice calls.

B.5.3 Pre-conditions

Alice and Bob have PoC capable terminals and service subscriptions, and have powered-on their phones. Their PoC phones have registered with the network for PoC service. The handsets have provided presence information about Alice and Bob to the network (either automatically, or upon Alice or Bob's interaction with the handset).

The mechanisms for synchronizing the contact lists between the handset and the server are outside the scope of this use case.

B.5.4 Post-conditions

Alice and Bob have finished their Private Call voice call and ended their session.

B.5.5 Normal Flow

To begin a PoC Session, the Alice selects Bob's name from her contact list. Alice notices in her contact list that Bob's presence status is "online", which indicates with high probability that Bob is reachable. Once the number has been selected by Alice (or keyed into the handset), she presses and holds the "POC" button/key, indicating to the network that she would like to speak. Alice hears a talk-proceed-tone, to indicate that she can now begin to speak. Alice now speaks and the person being called, Bob, hears a tone to announce the incoming private call, and then hears Alice talking from his handset. When Alice is done speaking, her "POC" button is released, and Bob hears a "floor open" tone to indicate that he may now reply. Bob is now able to press and hold the "POC" button/key, hears the talk-proceed-tone, and begins to speak. The conversation would continue in this back and forth manner.

If the listening party presses the "POC" button while the talking party has their "POC" button depressed, the listening party hears a rejection or waiting tone to indicate that it is not yet their turn to speak.

The flow of a call is as follows:

Alice: Presses and holds the "POC" button, hears the "talk-proceed" tone and speaks,

Bob: Hears the "incoming call" tone and hears Alice speaking

Alice: Releases the "POC" button

Bob: Hears the "floor is available" tone, presses and holds the "POC" button, hears the "talk-proceed" tone and speaks

Alice: Hears Bob speaking

The conversation would continue in this back and forth manner. When the parties conclude their discussion, they stop talking, and stop pressing their respective "POC" buttons. After a period of time of inactivity, the network will determine there is no activity, and automatically hang-up the session.

B.5.6 Alternative Flow

A number of alternative flows or methods exist for this private call;

- Method to select the called party - Alice may select Bob from the contact list as in the normal flow above, or may directly enter a number or handle through the handset keypad. Also, Alice may choose to select Bob from a recent call list, either received calls or dialled calls.
- Quick Key – Upon selecting the party to be called, Alice may quickly press and release the POC button. This has the effect of setting up the call with the target users, but immediately releases the floor once the call is established. Once the call is established, either Alice or Bob may request the floor. This method provides a "polite" technique of notifying the target, in this case Bob, that Alice would like to communicate, without having speech play out on Bob's handset.
- Call Termination – When Alice is finished with the call; she may press a key on the handset that ends the call. Bob would receive a notification on his handset that the call is terminated. This would end the call and release the session more quickly than the session being timed-out by the network.
- Invite Based Call Treatment - Bob may have his handset configured for an invitation mode, in order to prevent speech from immediately coming out of his handset. This would cause Bob's handset to be notified that there is an incoming call, and he could choose to accept it or not (similar fashion to a telephony call). When Alice presses the POC button, instead of immediately receiving a talk-proceed-tone, she would get a notice that the system is waiting

for Bob to accept the call. When Bob finally accepts the call, Alice will receive a talk-proceed-tone. If Bob does not accept the call, she would get a call-rejected notification.

- Do not disturb – If Bob does not want to be bothered for POC calls, Bob may configure his phone into a "do not disturb" mode. This would cause calls from anyone (Alice) to be automatically rejected.
- Presence Status Override - If on Alice's contact list, presence status for Bob is "unknown" (as opposed to "off-line", which means he is unreachable), Alice may attempt a call even though Bob's status is unsure. This is a possible situation under the condition that only a subset of contacts in Alice's contact list have been tagged to request presence updates. This tagging for updates may be done to reduce the network load required for presence updates. In this example, if Alice has 200 contacts in her list, perhaps only 10 people would be tagged to request presence updates. The other 190 people would have presence listed as "unknown" in her contact list, but Alice could still attempt calls to those people in spite of their unknown status.
- In call status – Alice can get a "User Busy" or "Unavailable" if a target user is already in engaged in a Private or Group Call. Alice may also get directed to leave a POC voice message, which will be enquired by the network for later playback for Bob.
- Call attempt failure – If Alice attempts to make a POC call to someone who is not available, and a mechanism has not been activated which enables Alice to leave a message, then after an appropriate alerting period the call attempt should terminate. Alice should be made aware of the reason for the call attempt termination and a mechanism should exist so that it is possible not to charge Alice for making the call attempt.

B.5.7 Operational and Quality of Experience Requirements

PoC Terminals should support the following (as a minimum):

- The terminals should support functions to setup the call, request the floor, and release the floor. *This does not need to be a dedicated button, although this will improve the user perception if available. The terminal should have separate buttons to manually exit the call.*
- The terminals should support distinct comfort tones to announce an incoming call, and to properly arbitrate the use of the Half Duplex service (talk-proceed, floor open, floor rejected).
- A "High Audio" speakerphone should be supported, *allowing for a walkie-talkie form of experience*.
- A contact list allowing for easy selection of the target users should be supported, as well as recent call lists.
- *Presence information should be available for all or a subset of users in the contact list.*
- Caller ID information must be provided to both parties of the private call.
- Visual indicators (in addition to the audio tones) should be provided, indicating if a user is in a call, if the user has the floor, or if the other participant has the floor.
- The initial call setup (first "POC") exchange can take longer than subsequent POC setups in the same session.

B.6 Call Alert – 1-to-1

B.6.1 Short Description

The Call Alert function is one that allows a user to "ping" each other, indicating that one user wishes to communicate with another user. Call Alerts are often used in conjunction with Private Calls, and are used as a polite method of letting the target of the call know that the originator wishes to talk (instead of having speech immediately coming out of the handset as in a Private Call). It is also similar to a Quick Key method as described in the Private Call use case. The Call Alert provides a notification to the target of the calling party, and the target may immediately hit their POC key to Private Call back to the originator. The Call Alert may optionally carry text or other media to from the originator to the target.

B.6.2 Actors

- Participants: Alice and Bob. Alice wishes to Call Alert Bob, in order to invite Bob to Private Call.
- Host: In this case, Alice is the invoker of the Call Alert.
- Network operator.

- Service provider

B.6.2.1 Actor Specific Issues

Participants

- Want to politely or discretely notify a target user that the originator wishes to communicate.
- Users want to respond quickly communicate using voice.
- Want easy to use handsets, with fast methods of selecting users and initiating a call.
- Want to know apriori that the user is reachable before the call.
- Want reasonably good voice quality.

Network Provider

- Wants to attract customers to new service.
- Wants to reduce subscriber churn to other network providers.
- Wants to maximise potential for VoIP services, offering new revenue generating service.

B.6.2.2 Actor Specific Benefits

Participants

Politeness or discrete calling capability. A "white collar" market feature. Call Alert leads to engaging in a Private Call.

Better productivity – PoC calls are of quick duration, and gets users back to more productive tasks (vs. waiting for calls, or participating in calls that typically last longer than PoC calls).

- Ease and speed of placing PoC voice calls.

Network Provider

Takes revenue from PoC Call Alerts, or expect that Call Alerts lead to Private Calls, which are charged.

B.6.3 Pre-conditions

Alice and Bob have PoC capable terminals and service subscriptions, and have powered-on their phones. Their PoC phones have registered with the network for PoC service. The handsets have provided presence information about Alice and Bob to the network (either automatically, or upon Alice or Bob's interaction with the handset).

B.6.4 Post-conditions

Alice has Call Alerted (notified) Bob that she wishes to be contacted. Bob and Alice are active on their respective networks. Bob's handset is configured to rapidly engage in a Private Call. This active configuration will persist for a period of time, after which Bob's handset will restore itself back to a non-Alerted mode of operation.

B.6.5 Normal Flow

Alice may also choose to "Call Alert" Bob as opposed to using the "Private Call" technique illustrated previously. To Call Alert someone, Alice selects a contact from the contact list. Instead of immediately pressing the "POC" button as in the Private Call scenario, Alice selects the "Alert" option (a button on the handset User Interface). Instead of pressing and holding the "POC" button and speaking, Alice presses and releases the "Call Alert" soft key. This sends a signal to the handset of Bob. Bob hears the Call Alert tone (or vibration), and may respond by pressing and holding the "POC" button to initiate a Private Call conversation with Alice. Alice's name or PoC number/URI is displayed on Bob's handset via Caller ID format.

A Call Alert allows Bob to choose his action based on his environment, and his ability to respond and engage Alice in voice communication. Bob may need to exit a meeting, or restaurant in order to participate in the PoC Session. Call Alert allows Bob the flexibility engage the POC call at an acceptable time, especially if the Private Calls use the speakerphone, which can be disruptive.

B.6.6 Alternative Flow

- Method to select the called party - Alice may select Bob from the contact list as in the normal flow above, or may directly enter a number or handle through the handset keypad. Also, Alice may choose to select Bob from a recent call list, either received calls or dialled calls.
- Method of Invoking an Alert – In the example above, Alice selected the Alert option which immediately sent the call alert to Bob. Other methods may be considered, such highlighting a user in the contact list, selecting the Call Alert option, and then toggle the "POC" key to actually send the Call Alert. This would be similar to a Quick Key method described in the Private Call section, except that the alert notification would be persistent for a period of time on the Bob's handset.
- Call Alert Rejection Options - Upon receiving a Call Alert, Bob has multiple options. Examples…
  - Bob can immediately push the POC button, and enter a Private Call back to Alice. After a period of time, this Call Alert notify may go away, putting the handset back into a nominal non-Alerted mode of operation.
  - He can ignore the Call Alert. The notification could stay persistent on the handset for a period of time, allowing for a later callback if Bob was away from his handset.
  - Select an option that will have the handset automatically invoke Instant Messaging Application back to Alice, allowing Bob to send Alice canned messages such as "Can't Talk Now" or allowing Bob to craft a custom message back to Alice. Or,
  - Hit a button to ignore the call.
- In call status – Alice can get a "User Busy" or "Unavailable" if a target user is already in engaged in a Private or Group Call.
- Call attempt failure – In the case where the Call Alert is ignored or rejected by Bob, then Alice should be made aware that call attempt has been terminated and a mechanism should exist so that it is possible not to charge Alice for making the call attempt. This assumes a mechanism has not been activated which enables Alice to leave a message.

B.6.7 Operational and Quality of Experience Requirements

PoC Terminals should support the following (as a minimum):

- Upon receipt of a Call Alert, the pressing the POC button should immediately setup a Private Call to the Call Alert originator.
- The terminals should support distinct comfort tones to announce an incoming call alert.
- A contact list allowing for easy selection of the target users should be supported, as well as recent call lists.
- Presence information should be available for all or a subset of users in the contact list.
- Originator Caller ID information must be provided to the recipient of a Call Alert.

B.7 User Defined Group Call – One-to-Many

B.7.1 Short Description

Group Call is a half-duplex dispatch audio communications between multiple PoC Users. In the case of User Defined Group Call, a user invokes a Group Call to a group list that user previously created via a network provisioning action. A PoC Subscriber creates and provisions a group which creates a persistent group identifier (which is held in the network and the handset) that the group owner can reference from his/her contact list. The PoC Subscriber that creates the group member list is the group owner for that group, and other members cannot change that member list, unless modification permissions are given to those members.

The PoC Subscriber can define the group member list via web mechanisms in the network, or via handset GUI operations, which allow the user to pick people from their contact list, and add those people to a group list definition. The group is given a name or handle, which can then be then referenced in the owners contact list.

If group members are in an automatic accept mode of call acceptance, typically associated with having high audio /speaker phone operation, the called parties are automatically joined to the group call. Otherwise, if they are in an invited mode of call acceptance, the called parties have the option of accepting or rejecting the group call invitation.

B.7.2 Actors

- Participants: Alice, Bob, Charlie, and Dave. Alice has defined a group, "Workteam", consisting of Alice, Bob, Charlie, and Dave. Alice wishes to call the "Workteam", for a short conversation.
- Host: In this case, Alice is the owner of the group "Workteam", and will initiate the group call.
- Network operator.
- Service provider

B.7.2.1 Actor Specific Issues

Participants

- Users want to respond quickly communicate using voice to a broad number of people, and have all those people participate in a discussion.
- Want easy to use handsets, with fast methods of selecting users and initiating a call.
- Want reasonably good voice quality.

Network Provider

- Wants to attract customers to new service.
- Wants to reduce subscriber churn to other network providers.
- Wants to maximise potential for VoIP services, offering new revenue generating service.

B.7.2.2 Actor Specific Benefits

Participants

Better productivity – PoC calls are of quick duration, and gets users back to more productive tasks (vs. waiting for calls, or participating in calls that typically last longer than PoC calls).

Ease and speed of placing PoC group voice calls. Group Calls far easier to coordinate that establishing conventional conference bridges.

Network Provider

Takes revenue from PoC voice calls. Group Calls can generate large aggregate minutes of use, as many people can be pulled into a call.

B.7.3 Pre-conditions

Alice, Bob, Charlie, and Dave have PoC capable terminals and service subscriptions, and Alice, Bob, and Charlie have powered-on their phones. Dave has not powered on his phone. Alice's, Bob's, and Charlie's PoC phones have registered with the network for PoC service. The handsets have provided presence information about Alice, Bob, and Charlie to the network (either automatically, or upon their interaction with the handset).

Alice, via a previous provisioning action, created a group called "Workteam" consisting of Alice, Bob, Charlie, and Dave. This group definition exists on both the handset and in the network. The mechanisms for synchronizing the group definitions and the contact lists are outside the scope of this use case.

B.7.4 Post-conditions

Alice, Bob, and Charlie have finished their User Defined Group Call and ended their session. Dave did not participate in the session.

B.7.5 Normal Flow

Alice would follow the same procedure for placing a User Defined Group Call as placing a Private Call, however instead of selecting a specific user on the contact list, a specific group would be selected, and in this case, it would be called "Workteam". In this case, no presence information is provided for a group, as it consists of multiple members with obviously difference presence states (Bob and Charlie are "online", Dave is "offline").

When Alice selects the "Workteam", she then presses and holds the "POC" button/key, indicating to the network that she would like to speak. The network attempts to reach all the group members. Alice hears a talk-proceed-tone as soon as the first group member handset joins the call, indicating that she can now begin to speak. As members are added to the call, Alice is notified as member join the call. For example, if Bob's handset automatically joins the call first, and Charlie's handset joins a few seconds later, Alice would be informed that Bob joined the group, and then a bit later Charlie joined the group. This way, members can be apprised as to who is on the call.

All of the active target members of the "Workteam", Bob and Charlie, will hear a tone to announce the incoming group call. A visual indicator (along with Caller ID of the originator) will be provided to Bob and Charlie to indicate that this is a Group Call verses a Private Call. Each member of the talk group will be able to respond and participate in the call using the previously outlined method for Private Call. PoC Users will not be able to participate in more than one group call at a time. The group call will continue with the "Workteam" as long as two or more members are engaged in the call. As soon as only one member exists on the call, or no group activity is detected, the "Workteam" group call session is terminated.

B.7.6 Alternative Flow

A number of alternative flows or methods exist for this User Defined Group Call;

- Call Start Criteria – The talk-proceed could be held off until all active members join. However, if invite methods are required at the target, this could significantly hold up the call start. Therefore, it is recommended that call start occur on the first join of any the group members.
- Call Tear Down Criteria – Based on the billing models, it might be desirable to terminate the group call as soon as the originator leaves the call, especially if the group call is paid for by the calling party. This should be a PoC system configuration capability.
- Missed Call Notifies - Members of the group who are on another POC call and not available for the User Defined Group Call will receive an indication on their handset that a Group Call from the call originator was missed.
- Invite Based Call Treatment - Invitation based call treatment at the target should be supported as in the Private Call.
- Callbacks – Even though Bob and Charlie don't own this group definition, the Group ID will show up in their recent call list. Since Bob and Charlie participated in the "Workteam" call, they can call that group back through their recent call list.
- Call Re-Join – In similar fashion to callbacks, if the one of the "Workteam" members drop off the call (tunnel, took another call, etc.), the members may re-join a group call in progress through initiating a POC call to the Group ID in their recent call list.

B.7.7 Operational and Quality of Experience Requirements

PoC Terminals should support the following (as a minimum):

- The same ergonomic elements called out for the Private Call support (POC buttons, comfort tones, contact lists, speaker phones, recent calls lists, active group member lists, visual indicators of Floor Control).
- Caller ID of the group originator should be provided to all parties of the group call. Additionally, the friendly group name, "Workteam" should also be provided.
- Current talker ID for the group should be provided.
- A list of active group member participants should be provided by the handset to the user.
- The initial call setup (first "POC") exchange can take longer than subsequent POC setups in the same session.

B.8 Selective Dynamic Group Call – One-to-Many

B.8.1 Short Description

As noted in the previous use case, Group Call is a half-duplex dispatch audio communications between multiple users. In the case of Selective Dynamic Group Call (SDGC), a user invokes a Group Call to a set of members that were selected (dynamically) on the handset, instead of the group members being a static user provisioning action on the network. The user selects the group members from his/her dispatch client contact list, initiates a group call, and the group membership is communicated to the network in near real time. Target members of the group call will be notified at setup time that this is a selective dynamic (e.g., adhoc or temporary) group call. This capability will greatly increase the attractiveness of using group call to reach multiple people, since the provisioning action is removed from the process. It will be a natural user process, similar to adding multiple users to an email, Instant Message, or SMS.

B.8.2 Actors

- Participants: Alice, Bob, Charlie, Dave, and Edward. Alice has defined a group, "Workteam", consisting of Alice, Bob, Charlie, and Dave. Edward is not part of the "Workteam" group. Alice wishes to call Bob, Charlie, and Edward for a quick conversation, but does not need Dave as part of the discussion.
- Host: In this case, Alice is the owner of the selective dynamic group including Bob, Charlie, and Edward. Alice will initiate the group call.
- Network operator.
- Service provider.

B.8.2.1 Actor Specific Issues

Participants

- Group call initiator does not want to spend the time provisioning a group that the user may only want for a temporary amount of time. User want to quickly make a group call without provisioning actions.
- Users want to respond quickly communicate using voice to a broad number of people, and have all those people participate in a discussion.
- Want easy to use handsets, with fast methods of selecting users and initiating a call.
- Want reasonably good voice quality.

Network Provider

- Wants to attract customers to new service.
- Wants to reduce subscriber churn to other network providers.
- Wants to maximise potential for VoIP services, offering new revenue generating service.

B.8.2.2 Actor Specific Benefits

Participants

- Speed of reaching multiple people is now very high. No fixed group provisioning is required. Very rapid interaction to potentially large numbers of people.
- Better productivity – PoC calls are of quick duration, and gets users back to more productive tasks (vs. waiting for calls, or participating in calls that typically last longer than PoC calls).
- Ease and speed of placing PoC group voice calls. Group Calls far easier to coordinate that establishing conventional conference bridges.

Network Provider

- Takes revenue from PoC voice calls. Group Calls can generate large aggregate minutes of use, as many people can be pulled into a call.

B.8.3 Pre-conditions

Alice, Bob, Charlie, and Edward have PoC capable terminals and service subscriptions, and Alice, Bob, and Charlie have powered-on their phones. Alice's, Bob's, Charlie's, and Edward's PoC phones have registered with the network for PoC service. The handsets have provided presence information about Alice, Bob, Charlie, Edward to the network (either automatically, or upon their interaction with the handset).

Alice has Bob, Charlie, and Edward in her contact list. However, Edward is not provisioned as a member of the "Workteam" group previously used.

B.8.4 Post-conditions

Alice, Bob, Charlie, and Edward have finished their Selective Dynamic Group Call and ended their session. Dave did not participate in the session.

B.8.5 Normal Flow

Alice would follow the same procedure for placing a Selective Dynamic Group Call (SDGC) as placing a Private Call, however instead of selecting a specific user on the contact list, multiple users are selected via the contact list user interface. As in User Defined Group Call, no presence information is provided for a group, but in this case, Alice can see individual presence on each member as she selects them to join the call. This way, she can use presence to influence who she should invite to the temporary group call.

When Alice finishes selecting the SDGC members, she then presses and holds the "POC" button/key, indicating to the network that she would like to speak. The network attempts to reach all the group members. Alice hears a talk-proceed-tone as soon as the first group member handset joins the call, indicating that she can now begin to speak. As members are added to the call, Alice is notified as member join the call. For example, if Bob's handset automatically joins the call first, and Charlie's handset joins a few seconds later, Alice would be informed that Bob joined the group, and then a bit later Charlie joined the group. This way, all members can be apprised as to who is on the call.

All of the active target members of the SDGC, Bob, Charlie and Edward, will hear a tone to announce the incoming group call. A visual indicator (along with Caller ID of the originator) will be provided to Bob, Charlie, and Edward to indicate that this is a Group Call verses a Private Call. Each member of the talk group will be able to respond and participate in the call using the previously outlined method for Private Call. PoC Users will not be able to participate in more than one group call at a time. The group call will be continued with the SDGC as long as two or more members are engaged in the call. As soon as only one member exists on the call, or no group activity is detected, the group call session is terminated.

B.8.6 Alternative Flow

A number of alternative flows or methods exist for this User Defined Group Call;

- Embedding Defined Groups in a SDGC – In addition to selecting users for a SDGC, Alice could have also selected the "Workteam" as a member for the SDGC. This function will allow the user to use the SDGC capability to temporarily merge multiple groups for a group call. So in the previous case, she could have selected "Workteam" and Edward and gotten the same effect vs. selecting all members individually.
- Call Start Criteria – The talk-proceed could be held off until all active members join. However, if invite methods are required at the target, this could significantly hold up the call start. Therefore, it is recommended that call start occur on the first join of any the group members.
- Call Tear Down Criteria – Based on the billing models, it might be desirable to terminate the group call as soon as the originator leaves the call, especially if the group call is paid for by the calling party. This should be a PoC system configuration capability.
- Missed Call Notifies - Members of the group who are on another POC call and not available for the User Defined Group Call will receive an indication on their handset that a Group Call from the call originator was missed.
- Invite Based Call Treatment - Invitation based call treatment at the target should be supported as in the Private Call.
- Callbacks – Even though Bob and Charlie don't own this group definition, a temporary SDGC Group ID will show up in their recent call list. Since the SDGC is a temporary group, this definition may only last for a period of time (for example, 1 hour), and then will then become an invalid group ID.

- Call Re-Join – In similar fashion to callbacks, if the one of the SDGC members drop off the call (tunnel, took another call, etc.), the members may re-join a group call in progress through initiating a POC call to the temporary SDGC Group ID in their recent call list.

B.8.7 Operational and Quality of Experience Requirements

PoC Terminals should support the following (as a minimum):

- The same ergonomic elements called out for the Private Call support (POC buttons, comfort tones, contact lists, speaker phones, recent calls lists, active group member lists, visual indicators of Floor Control).
- Caller ID of the group originator should be provided to all parties of the group call. Additionally, an indicator should be provided that indicates that this is a temporary SDGC group. This is to differentiate SDGC group definitions from User Defined Group definitions, since SDGC group definitions are removed from the network after a period of time.
- Current talker ID for the group should be provided.
- A list of active group member participants should be provided by the handset to the user.
- The initial call setup (first "POC") exchange can take longer than subsequent POC setups in the same session.

B.9 Private Chat Group Support – One-to-Many

B.9.1 Short Description

Chat groups in PoC have similar operational behaviours as conventional group calls, with the following main differences;

- When a user builds/defines a Chat Group, it is a private group, and specific members are invited to the chat group. The Chat Group ID is provided by the PoC service to all selected members of the group.
- Users may join the Chat Group via selecting the Chat Group ID from their contact list (or other chat group lists) and pushing POC. However, joining a chat group does not result in inviting all the members of the group, as in group call. Members join the group of their own volition.
- Once users join, they stay attached or bound to that group in a static fashion, whether there are discussions in the Chat Group or not.
- If no one is speaking in the Chat Group, the radio resources may be released by the network after a period of time. Upon activity in the group, the audio will be transmitted to the users attached to the group, which may result in activating the RF channels for those users.
- Users participate in the Chat Group in a half-duplex fashion as in the Group Calls.
- When a user wishes to unattach from the group, this will require a user action on the device to signal to the network to remove him from that Chat Group session.

Chat Groups really differ from a group call in the sense that people join and leave as they wish, and members are not actively pulled into a call as people join. It is "permanently" created by an owner, and has properties similar of a conference bridge.

Concerns exist on the feasibility of public POC Chat Groups that would be created by a PoC Service Provider. Issues of privacy, name hiding, group moderation and supervision, control / overloading, and the basic utility must be explored more fully.

B.9.2 Actors

- Participants: Alice, Bob, Charlie, Dave. Alice has defined a chat group, "Sales Chat Room", consisting of Alice, Bob, Charlie, and Dave. Alice wishes to have a quick "conference call" at 9 am with Bob, Charlie, and Edward for a fast sales status review.
- Host: In this case, Alice is the creator of the "Sales Chat Room", including Bob, Charlie, and Edward. After she creates the Chat Group, the notification of the "Sales Chat Room" is sent to Bob, Charlie and Edward.
- Network operator.
- Service provider.

B.9.2.1 Actor Specific Issues

Participants

- Chat Group creator wants to create a fast access "conference bridge" that is persistent, and can be used at any time. The group is closed, but readily accessible for all approved members.
- Want easy to use handsets, with fast methods of selecting users and initiating a call.
- Want reasonably good voice quality.

Network Provider

- Wants to attract customers to new service.
- Wants to reduce subscriber churn to other network providers.
- Wants to maximise potential for VoIP services, offering new revenue generating service.

B.9.2.2 Actor Specific Benefits

Participants

- Chat Group provides very fast access "conference bridge service". Very likely more cost effective than paying for conventional bridging service. Also, Chat Group ergonomics will likely shorten meeting times compared to normal conference bridge sessions.
- Chat Group allows people to participate in "Group Call" like sessions, without being bothered with an invitation to join the group call. People join the group on as their schedule allows, vs. being immediately pulled into a group call.
- Ease and speed of placing PoC chat group calls. Group Chat calls far easier to coordinate that establishing conventional conference bridges, and are permanent.
- Better productivity – PoC calls are of quick duration, and gets users back to more productive tasks (vs. waiting for calls, or participating in calls that typically last longer than PoC calls).

Network Provider

- Takes revenue from PoC chat groups. Like Group Calls, Chat Groups can generate large aggregate minutes of use, as many people can join the call.

B.9.3 Pre-conditions

Alice has previously defined a chat group, "Sales Chat Room", consisting of Alice, Bob, Charlie, and Dave, and this Chat Group ID / name has been sent and stored in their devices. Alice wishes to have a quick "conference call" at 9 am with Bob, Charlie, and Edward for a fast sales status review, so Alice sends an SMS message to Bob, Charlie, and Dave requesting them to join the "Sales Chat Room" at that time.

B.9.4 Post-conditions

The "Sales Chat Room" call is over, and all members have exited (un-attached) from the "Sales Chat Room".

B.9.5 Normal Flow

Alice, Bob, Charlie and Dave would follow a similar procedure for joining a Chat Group as placing a Private Call, however instead of selecting a specific user on the contact list, a specific Chat Group would be selected, and in this case, it would be called "Sales Chat Room". In this case, no presence information is provided for a chat group, as it may consist of multiple members with obviously difference presence states (Bob and Charlie are "online", Dave is "offline").

When Alice finishes selecting the "Sales Chat Room", she may press and release ("Quick key") the "POC" button/key, indicating to the network that she would like join the group. The push and release method is suggested so that she can use the POC button as the method to join the chat group, which will cause her to join and be put into a listen mode. This way, if group members have already joined, they may already be speaking and have the floor. She will begin to hear dialog on the next talkspurt after joining. If Alice does not hear anyone speak, she may request the floor via pushing the "POC" button again.

Alternatively, she may press and hold the button after selecting the "Sales Chat Room", and if provided the talk proceed tone, she may immediately begin speaking. However there is a chance that she will be rejected if someone else in the Chat Group is already speaking. Therefore, the press release method is suggested as the preferred behaviour to join a Chat Group.

As members join, the handset devices display the Caller ID's of the joining parties in the Chat Group. Additionally, an 'entry' audio tone is played on the handsets, indicating that a person joined the group.

Alice was the first person to join the Chat Group, Bob joined a few minutes later, and then Charlie and Dave joined the Group near the same time. Once Alice has determined that all the group members are on the call (confirmed through her handset display), she has a discussion with each of the team members on their sales contacts status, in a back and forth half duplex manner as in Group Call. When Alice has all of her status from the team members, she says goodbye and leaves the Chat Group. Bob and Charlie stay in the Chat Group for a while longer to talk about some sports related topics, and Dave is not interested and leaves the chat group. When the members want to leave the chat group, each of the participants detach from the Chat Group via an option on the handset GUI. It should be emphasized that there is no session timer for Chat Groups, and if there is a large amount of time between talk spurts, the chat session is not terminated by the PoC service. Exiting the Chat Group requires a manual action from the member.

B.9.6 Alternative Flows

- Handset Automatically Logs Off Chat Group if Idle - A handset client may have additional functionality to provide an automatic logoff from a chat group if there has been no activity on the group for a period of time, configured by the PoC User.
- Creator Privacy Control – The creator of the Chat Group should have the ability to specify if only the provisioned users may join the group, or if the chat group is open to other non-provisioned members if they are given the Chat Group name/ID.

B.9.7 Operational and Quality of Experience Requirements

PoC Terminals should support the following (as a minimum):

- The same ergonomic elements called out for the Private Call support (POC buttons, comfort tones, contact lists, speaker phones, recent calls lists, active group member lists, visual indicators of Floor Control).
- Caller ID of all chat group participants should be provided to all parties of the group call. As users join and leave, the handset devices should display the participant lists to reflect the current membership status. Also, join and leave tones should be played at the handset as member join / leave.
- Users must explicitly join and leave the chat group through actions on the handset. No automatic joins, or automatic session teardowns occur for chat groups.
- Current talker ID in the chat group must be provided.

B.10 Mobile Fixed Inter-working

B.10.1 Short Description

Benjamin, Jake and Alexandra are part of the White Knights death match team that participates in Doom death matches on an online gaming service. The White Knights have been challenged by the Dark Lords to a Doom death match. Benjamin has agreed with the head of the Dark Lords to death match at 7:00 PM tonight. Come 7:00 PM Benjamin and Jake have connected to the online gaming service from their game consoles and are chatting using the game services push-to-talk feature. There is no sign of Alexandra and they have to start the Doom death match against the Dark Lords without her. The Dark Lords start beating up the White Knights. It is looking ominous and Benjamin realizes that they desperately need Alexandra. Benjamin uses the online gaming service live talk feature to initiate a PoC Session with Alexandra on her PoC enabled terminal.

B.10.2 Actors

- Participants: Jake, a member of the White Knights death match team and the Dark Lords death match team all with PoC enabled Internet terminals
- Participant: Alexandra, a member of the White Knights death match team and a mobile PoC User with a PoC enabled mobile terminal

- Host: Benjamin is the head of the White Knights death match team
- Network Operator: Network operator with PoC service
- Service Provider: Online gaming service

B.10.2.1 Actor Specific Issues

Participants

- Want to quickly contact team members anywhere, anytime, from anyplace, using any device
- Want to use nearest PoC enabled device

Network Provider

- Wants to expand the potential for revenue generation
- Wants to create opportunities for service inter-working.

Service Provider

- Wants to expand the potential for revenue generation
- Wants to increase community reach.

B.10.2.2 Actor Specific Benefits

Host

- Can quickly contact team members anywhere, anytime, from anyplace, using any device.

Network Provider

- Expands the PoC revenue stream.

Service Provider

- Gains additional revenue
- Adds functionality to the service that increases community reach.

B.10.3 Pre-conditions

The online gaming service live talk feature connects with Alexandra's network provider's PoC service

The gaming consoles of all participants include a two-way voice interface such as a speakerphone or headset

Alexandra's online gaming service profile includes her PoC URI

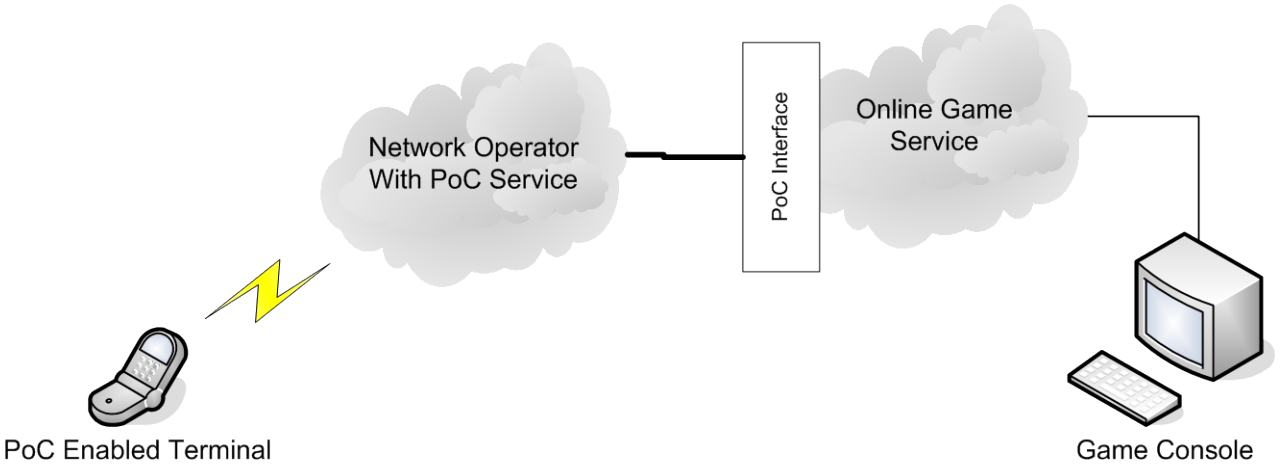
Benjamin's online gaming service account is enabled to use the PoC connection

B.10.4 Post-conditions

Benjamin contacted Alexandra on her PoC enabled mobile terminal. Alexandra joined the Doom death match in time for the White Knights to beat the Dark Lords

B.10.5 Normal Flow

Come 7:00 PM Benjamin and Jake have connected to the online gaming service from their game consoles and are chatting using the game services "live talk" feature. There is no sign of Alexandra and they have to start the Doom death match against the Dark Lords without her. The Dark Lords start beating up the White Knights. It is looking ominous and Benjamin realizes that they desperately need Alexandra.



1) Benjamin selects Alexandra from the list of team members and presses the “Talk” button on his headset.
2) The online gaming service live talk feature initiates the session to Alexandra’s PoC enabled terminal via the connection with Alexandra´s network provider’s PoC service.
3) Benjamin hears a tone in his headset indicating that he is connected to Alexandra.
4) Benjamin speaks into his headset microphone and releases the “Talk” button and waits for Alexandra’s response.
5) The online gaming service sends Benjamin’s message to Alexandra’s PoC enabled terminal via the connection with her network operator’s PoC service.
6) Alexandra hears Benjamin’s message. She presses the “Talk” button on her mobile.
7) Alexandra immediately hears a tone on her mobile indicating that she is connected to Benjamin’s game console.
8) Alexandra speaks into her mobile, telling Benjamin that she will be online in a couple of minutes, and releases the “Talk button.
9) The network operator’s PoC service sends Alexandra’s message to Benjamin’s game console via the connection with his online gaming service.
10) Benjamin hears Alexandra’s message. Benjamin returns to the Doom death match knowing that reinforcements will arrive soon.

B.10.6 Alternative Flow

B.10.6.1 Incoming PoC with session acceptance

As in the normal flow, except…

2.5) Alexandra receives an indication of an incoming PoC Session and accepts the PoC Session.

B.10.6.2 Incoming PoC with session rejection

As in the normal flow, except…

2.5) Alexandra receives an indication of an incoming PoC Session and rejects the PoC Session.

3) Benjamin receives an error indication and the PoC Session is not established.

B.10.7 Operational and Quality of Experience Requirements

1) The online gaming service live talk feature is capable of connecting with a PoC network.
2) The network operator should be able to exchange charging information for a PoC Session with the online gaming service.

B.11 Use of multiple group operation

In this use case, Julie is a cleaner in a hotel, and her work also includes responsibility to coordinate workflow with the hotel laundry.

B.11.1 Short Description

- Julie participates both in the group “cleaners” and in the group “laundry”. The group “cleaners” is used whenever the cleaners need any kind of assistance of each other, and when any other related person has something to communicate to or request from the cleaners. In this example, the groups are chat rooms that are joined by the persons involved at the beginning of their work shift, but the use case can be applied to other types of groups as well.
- Julie is hearing voice from the group “laundry”.
- Now the hotel receptionist selects the group “cleaners” on his/her PoC User equipment. Presses the talk button and starts to talk to ask if there is any vacant, single room already cleaned up.
- Because the group “cleaners” is related to Julie’s primary duties, the transmission of the receptionist will override her reception of the group “laundry” and she will hear the voice of the receptionist.
- Note that the communication in the laundry group is not disturbed in any way. In addition, if Julie is talking in the “laundry” group, she is not interrupted.
- Julie sees on the PoC User equipment display that the “cleaner” group communication is received and receptionist is talking.
- Julie presses the talk button, when she sees on her display that the receptionist talk burst is over and tells that she has a room # 274 available.
- The receptionist thanks Julie and gives the room to the customer.
- After a certain period, if there is no subsequent traffic in the group “cleaners”, Julie starts to hear the group “laundry” again (if there is traffic).

B.11.2 Actors

Participants

- Hotel receptionist, who needs to be able make requests to cleaners.
- Julie, a cleaner, who needs to keep informed of the situation in the hotel laundry.
- Other cleaners.
- Laundry personnel.

Host

- Hotel management

Network operator.

Service provider.

B.11.2.1 Actor specific issues

Participants

- want to be able to receive “handsfree” information related to their work
- want to be able to reach people related to their own work quickly and easily
- want to keep informed of the activities of groups related to their own work, by monitoring traffic in such groups
- want to give priority to the particular group

Hotel management

- wants to optimize the efficiency of their operations
- wants to minimize the communication cost to support the workflow

Network provider

- wants to minimize the resources used for a given revenue

B.11.2.2 Actor specific benefits

Participants

- Each participant hears only the traffic that is relevant to her work

Network provider

- A more efficient solution, because it allows using two small groups instead of one large one, so that less resources are used

B.11.3 Pre-conditions

All parties have PoC capable terminals and PoC service subscriptions. Receptionist and all cleaners on working duty are beforehand joined in the same group "Cleaners". Julie, one of the cleaners, has joined the group "cleaners" as her primary group and additionally the group "laundry".

B.11.4 Post-conditions

Receptionist has found a cleaned room.

B.11.5 Normal Flow

Julie activates group "cleaners" as her primary group and the group "laundry" as an additional group.

Julie hears traffic from the group "laundry" if there is no traffic in the group "cleaners".

Receptionist selects the group "cleaners" to talk to, presses the talk button and asks if any single room is already cleaned.

All group members see that receptionist is talking and hear that she/he is asking a cleaned room. Those group members, who have "cleaners" as their primary group, hear the receptionist even if they were just hearing another group.

One of the group members has a room ready made and she presses the talk button, when the previous talk burst is over and talks to receptionist, that she has a room. All other group members hear also, that room was found and there is no need anymore to talk with receptionist.

B.11.6 Operational and Quality of Experience Requirements

A PoC User shall be able to be joined-in to more than one group at a time for group communication. There can be two levels of groups for a user: one of the joined-in groups may be his primary group and the rest of the groups are secondary.

In case a user only has secondary groups, the main requirements are:

- If there is traffic in more than one group at the same time, there shall be a means to filter the traffic so that the user hears a single conversation
- The user shall start to hear traffic from any group that starts first
- The user shall continue hearing the same discussion (i.e. traffic from the same group) rather than hopping from group to group, unless there is a period of silence to indicate that the discussion has ended
- Because the user will be receiving voice from multiple groups in sequence, there shall be a means to identify which group is being received

- There may also be means to allow user to hears multiple groups at the same time
- When the user wants to talk into a group, she shall be able to select to which group to talk. The selection may also be implicit, e.g. the transmission is to the group that was most recently heard

In case the user has a primary group and secondary group(s), the following additional requirements are

- If there is no traffic in the primary group, the user shall receive traffic from secondary groups according to the requirements described above
- Voice in the primary group shall be received immediately, even if the user was receiving voice in secondary group
- As long as there is traffic in the primary group, the user shall continue hearing it, until there is a period of silence to indicate that the discussion has ended.
- When the user wants to talk into a group, it shall be possible to have the primary group as the default target
- The user shall be able to change her primary group
- When the user is talking, her transmission should not be interrupted because of traffic in another group
- The user shall be able to lock herself temporarily into one group and thus, suspends the listening of the other groups.

B.12 "Whispering" during an active session

B.12.1 Short Description

- Alice, Bob, Charlie, Dave, and a couple of others participate in a chat room or a group call in order to decide which action to take in new and urgent situation. Alice is leading the discussion, but so far no solution has been identified
- Bob has a new idea, but does not want to disclose it yet to everybody, before he has checked some details with Charlie. Bob selects Charlie and presses the talk button to talk to him privately while the communication in the group is continuing.
- Charlie hears Bob's idea and answers quickly to the question that Bob had raised. After a short discussion of 15 seconds Bob and Charlie are back in the group again.
- Bob is now convinced that the idea is workable, and wants to present it to Alice. At the moment, Dave is discussing something with some other participants of the group. Bob selects Alice to talk to her directly.
- Alice hears Bob's idea and agrees that it is worth to consider. After 10 seconds, both are back in the group again.
- When the floor in the group is free, Alice informs that there is a new proposal. Bob starts to present his idea.

B.12.2 Actors

Participants

Alice, Bob, Charlie, Dave, and other group participants.

Network operator

Service provider

B.12.2.1 Actor specific issues

Participants

- want to be able to conduct short "whispering" discussions person-to-person while taking part in a group communication, without losing more of the group communication that is absolutely necessary

B.12.2.2 Actor specific benefits

Participants

- Can conduct short private discussions on sensitive issues that they do not want to disclose to the whole group
- Can conduct short private discussions without disturbing the whole group

- Can conduct the active discussion without being disturbed by people having private discussions

B.12.3 Pre-conditions

All parties have PoC capable terminals and PoC service subscriptions. Participants have joined a chatroom, or alternatively there is group call in progress between the participants.

B.12.4 Post-conditions

The participants may either continue the group communication or to conclude it.

B.12.5 Normal Flow

Bob selects Charlie and presses the talk button to talk to him privately while the communication in the group is continuing.

Charlie starts hearing Bob's voice instead of the group traffic.

Charlie listens to Bob's idea and answers quickly to the question that Bob had raised.

Bob selects Alice and presses the talk button to talk to her directly.

Alice hears Bob's idea.

When the floor in the group is free, Alice informs that there is a new proposal

B.12.6 Alternative Flows

Bob selects Charlie and presses the talk button to talk to him privately while the communication in the group is continuing.

Charlie notices that Bob is trying to talk to him, and presses a button to accept.

Bob gets an indication, starts to speak and Charlie starts now hearing Bob's voice instead of the group traffic.

Charlie listens to Bob's idea and answers quickly to the question that Bob had raised.

Bob selects Alice to talk to her directly.

Alice accepts Bob's call, hears Bob's idea.

When the floor in the group is free, Alice informs that there is a new proposal.

B.12.7 Operational and Quality of Experience Requirements

A user, who participates in a group communication, shall be able to initiate and conduct a short person-to-person discussion with another group participant, without losing more of the group communication than absolutely necessary.

A user, who participates in a group communication, should be able to initiate and conduct a short person-to-person discussion with any PoC User, without losing more of the group communication than absolutely necessary.

A person-to-person conversation by a group participant shall not affect in any way the other group participants.

Users shall be able to receive person-to-person whispering calls while taking part in a group communication, either through automatic or manual answer. Users shall be able to control the automatic acceptance of person-to-person whispering calls while in a group, at least in the following ways:

- Calls from participants in the same group accepted.
- Calls from any user accepted.
- Calls require manual acceptance.

B.13 Ad-hoc Chat Group Support – One-to-Many

B.13.1 Short Description

PoC Host creates an Ad-hoc PoC Group a week before an important meeting. The PoC Group ID is circulated on a company's internal mailing list. The PoC Host's colleagues, who plan to attend the meeting, register with the Ad-hoc PoC Group individually using the PoC Group ID. (A colleague gives the Group ID to his friend; this friend is not part of the

group who plans to attend the meeting.) A corresponding buddy list is automatically created; any of the PoC Participants in the PoC Group can see who is online/offline

B.13.2 Actors

- Participants (10): Paul, George, Ringo, John, Yoko, Billy, Bob, Eric, Elton and Michael. Paul has defined an ad hoc PoC group called "Meeting Chat Room". (The chat room consists of no members yet. Later on, other people will register themselves to the chat room in a simple manner described later in this paper.)
- PoC Host: Paul is the PoC Host. He creates the "Meeting Chat Room", which now includes no members. After he creates the ad hoc PoC group, a PoC Group ID (numerical or alphanumerical) is displayed on his screen. Paul sends this information to the appropriate members via his email account
- Network operator (or PoC Service Provider): at registration the network operator provides the facility to check if the entered PoC IDs (PoC User identities) belong to the PoC Participant. For this ad hoc PoC service, PoC IDs are of the nature of MSISDNs or SIP URIs so other PoC Participants can identify who is in their PoC group. However, in case of public PoC chat rooms, nicknames can be supplemented for PoC IDs.

B.13.2.1 Actor Specific Issues

Participants

- PoC Host wants to create an ad hoc PoC Group on the fly, but he does not want to be bothered with the administrative actions[1]; he wants to have each member register him/herself. Therefore, all members have some administrative rights.
- To maintain some level of security/privacy when a PoC Participant registers himself using his Group ID the corresponding MSISDNs or SIP URIs are checked by the network operator and are shown on each PoC Group participant's screen. Any PoC Participant can see the list on his/her terminal.
- In some cases, a malicious PoC User, who is an outsider, could steal the PoC Group ID by eavesdropping, and secretly join the PoC Group. A PoC Host has the right to remove any PoC members from the ad hoc PoC Group and to block him/her from future registration.
    - Additionally the PoC Host can also grant rights to any participant to remove/block PoC members.

Network Operator (or PoC Service Provider)

- The network operator (PoC Service Provider) checks the registrants' PoC IDs (PoC User identities) at registration. All PoC Group participants are visible to each participant. A cooperated operation between the network operator and the PoC Service Provider is necessary to archive a certain level of security. Additionally, cooperation of participants (including the Host) can be a measure of fraud avoidance.

  Three levels are provided for PoC group communications
    - *Prearranged (already defined)*
    - *Ad Hoc (already Defined)*
    - *Chat Mode*
        - *Member-only*—Anybody can join the group if he/she has membership via a PoC Group ID.
            - *His (MSISDN/URI) information is displayed*
        - *Public*—Anybody can join the group if he/she has membership via a PoC Group ID.
            - *His nickname may be displayed*

[1] Ad hoc PoC Group communications are intended for casual ad hoc communications mimicking the legacy walkie-talkie operations. Degraded security/privacy might be a trade-off.

B.13.2.2 Actor Specific Benefits

Participants

- **Simplicity and quickness for Ad-hoc PoC Grouping** -- for the PoC Host, administrative actions are limited to the request of the PoC Group ID and the creation of the chat room. This is requested to either a network operator or to a PoC Service Provider. The PoC Host can also define the expiration time (optional) for 1, talk sessions and 2, termination of the group itself (for, say, 2 days after the meeting).
- **Openness** -- anybody who knows the PoC Group ID can join the PoC Group. This is, in a sense, similar to a typical IM chat room.

Network Provider

- **More PTT usage expected—**PoC usage will increase by providing more open access levels; *members-only* access and *public* access.

B.13.3 Pre-conditions

Paul registers and obtains a PoC group ID via the PoC User interface on his terminal. Paul then sends the ID to his colleagues via his company's internal mailing list. His colleagues, who plan to attend the meeting see Paul's message. They get the ID and store it (on paper or via some device). Paul set the PoC Group to terminate 24 hours after the last day of the meeting.

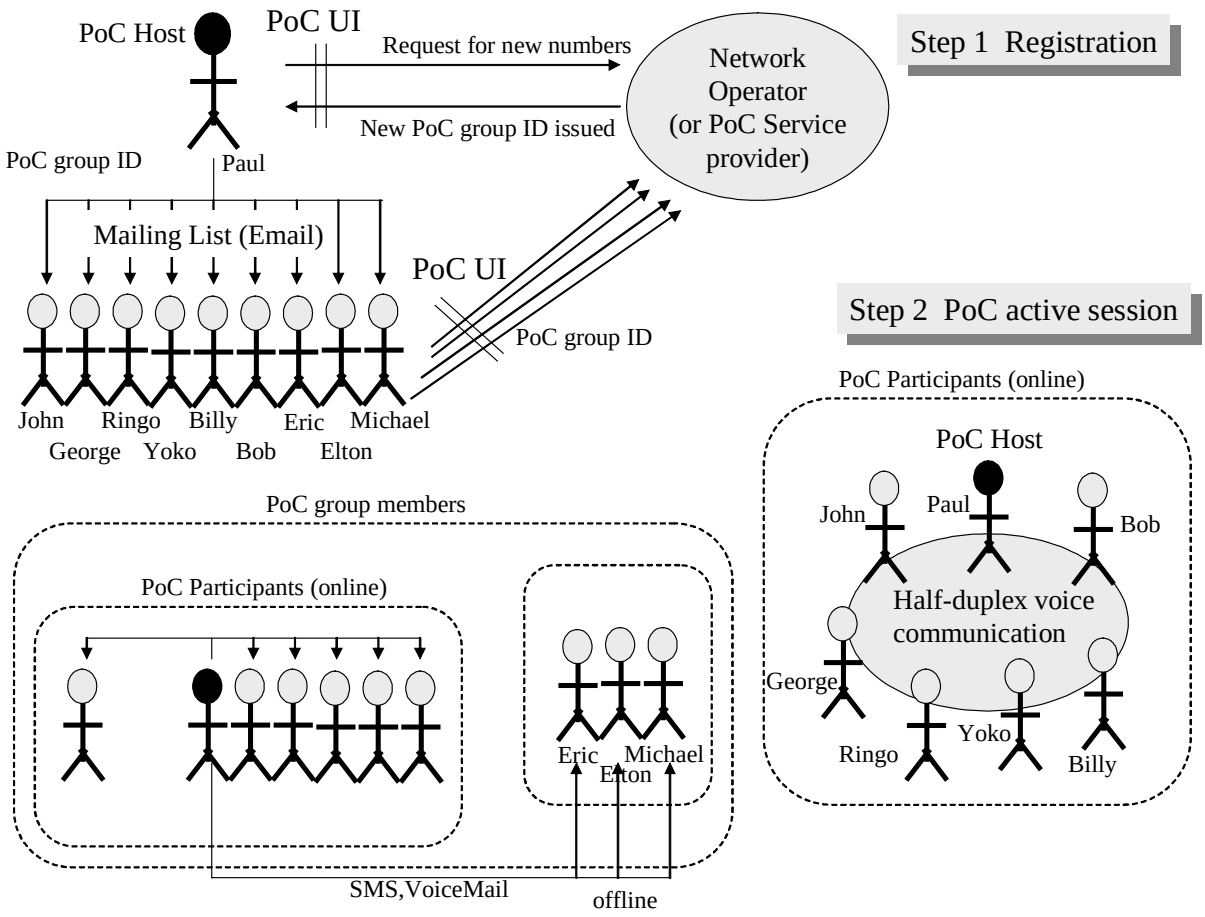
B.13.4 Post-conditions

The meeting is over, and all the members have no use for this PoC Group Chat Room. In 24 hours from the last meeting day (designated by the Host), the PoC Group is terminated.

B.13.5 Normal Flow

The figure below explains the service steps schematically.

Step 1 is divided into two sub-steps; Sub-step 1, the Host requests a PoC group ID, and Sub-step 2, Participants register to the group by entering the PoC group ID via the PoC User interface (PoC UI).



Step 1 Registration

- A week before the meeting, John, George and six other colleagues receive an email form Paul (making 9 total members), which says, "Let's create an ad hoc PoC Group for our upcoming meeting. Please join the PoC Group with this PoC group ID". Some of the members register to the PoC Group at once. But some others do not.
- The morning of the first meeting day, Ringo meets Elton. Elton says to Ringo, "Have you already registered with the PoC Group?" Ringo says, "Darn, I forgot! I lost the ID". Elton jots down the ID on a sheet of paper and says, "You are so forgetful. Here you are", and gives the paper to Ringo. Ringo registers with the PoC Group.
- Yoko comes across Michael in the main venue just near finishing time. Although Michael is not one of the original 9 members, he is one of Yoko's buddies and Yoko wants Michael to join his PoC Group as they will soon go out for beers. Yoko hands Michael the ID.

Step 2 PoC active session

- John, who has already registered to the PoC Group, finds a guy named Michael is suddenly on the list. He is disgruntled and makes a PoC Private Call (1-to-1), "Who on earth are you?" Michael says, "I used to sing with Yoko's husband. Yoko invited me but perhaps she has not notified the group yet. I will log off so that nobody else is surprised. Hope you don't mind me coming with you tonight for drinks and dinner. "
- Around half past 6pm, the group is ready to drink and eat. Paul makes a PoC Alert Call to all the PoC Group participants. Seven participants are logged-in (PoC Participants – online, active), but three other participants (Eric, Elton and Michael) are offline. After waiting for a few minutes, Paul makes a PoC Group Call by pressing Talk Button, "Guten Abend! I used to live in this area when I was in college. The beer was great. Are we all ready?"
- John replies, "I want to have Eisbein mit Sauerkraut! And beer, of course! My favourite is Berliner Kindle".

- Ringo asks the group, "Say, where shall we dine? I happen to be walking in Europe Centre, a popular shopping mall in West Berlin. I see a German restaurant called Alt-Nuernberg. It looks good. I can even go through the menu while I am talking to you. Group agreed to discuss the menu over the PoC Session
- Paul, "After our call I'll send an SMS or voice mail to those offline (Eric, Elton and Michael) with a message, **Eating out, Alt-Nürnberg in Europe Centre, 7PM, Tel:030 2614397".**

B.13.6 Operational and Quality of Experience Requirements

PoC Terminals support the following:

- Chat Mode PoC Group user interface is provided. A user requests and obtains a PoC Group ID that is issued by a network operator/PoC Service Provider via the user interface. The user enters via the UI, the PoC Group ID to become one of the PoC Group participants. The registered participant is automatically and dynamically added to the buddy list belonging to the PoC Group ID.
- The PoC IDs are tied into either MSISDNs or SIP URIs of all registered participants to the PoC Group and are visible on the PoC Group List. Optionally user names, for example, "John Doe" in this SIP From header field [From: John Doe <sip: Jdoe@necam.com>], are displayed.

A network operator (and PoC Service Provider) supports the following:

- Chat Mode PoC group services are provided with the following access levels – *members-only* and *public* .
- For *members-only* and *public* access levels, a network operator has to give part of the administrative rights to every PoC Group Member to let him manage his own PoC group registration.
- For *members-only* and *public* access levels, a network operator has to grant the PoC Host with administrative rights. For example, PoC Host may remove any PoC Group Member (and block him/her from future participation) in the PoC Group.
  - ✧ Additionally a PoC Host may grant a participant with the same rights
- For *members-only* and *public* access levels, a network operator has to perform some form of authentication for PoC Group Member registrations.
- Anonymous access or nicknames may be allowed and are at the discretion of the PoC Host or network operator (PoC Service Provider).
- For *members-only* access level a 'buddylist' is created when the PoC Group ID is issued or when the first PoC User logs into the 'chat room' of the PoC Group.
- For *public* access level a 'buddylist' may not be created when the PoC Group ID is issued or when the first PoC User logs in the 'chat room' of the PoC Group. However, a network operator must create a 'buddylist' when the PoC Subscriber requests a certain level of security/privacy.

B.14 Fleet Dispatch – One-to-Many-to-One

B.14.1 Short Description

A fleet delivery service or taxi service using PoC for dispatching has similar operational behaviour to group calls, with the following main differences:

- Fleet members and dispatcher use a dedicated PoC group for dispatch management.
- The dispatcher is a distinguished actor with capabilities that are quite distinct from those of the fleet members:
  - o All fleet members hear the dispatcher, or,
  - o In a more sophisticated version where PoC and Locationing services are both available, only fleet members meeting a given criterion selected by the dispatcher, such as being within 5 km of a given location, might hear the dispatcher in a given instance.
  - o Only the dispatcher hears an individual fleet member. This is different from all other use cases.

- Optionally, the dispatcher can preempt the channel from the fleet member.

B.14.2 Actors

- Participants: there are two classes of participant:
  - The dispatcher, who can interact with all the fleet members or any subset of them
  - The individual fleet members, who can only interact with the dispatcher.
- Host: The dispatch channel is typically administered independently of the participants. The administrator assigns dispatch and fleet roles to the participants.
- Network operator: Provides the network and radio resources used for the communications.
- Service provider: may be the network operator, the fleet operator, or some third party provider supporting dispatch as a value-added service.

B.14.2.1 Actor Specific Issues

Participants

- The dispatch channel should be permanently available and easily accessible.
- Access to the dispatch channel should be limited to the dispatcher and the fleet members.
- All fleet members need to be able to hear the dispatcher.
- Only the dispatcher needs to hear the fleet members.
- Voice quality only needs to be intelligible.

Host

- Needs to be able to add and remove fleet members from the group
- Needs to be able to assign different employees dispatcher authority
- Needs standard terminals for fleet members, specialized dispatch terminal for dispatcher.
- Wants to reduce communications costs
- Wants to be able to integrate dispatch with other services, e.g. locationing, emergency systems, text messaging

Network operator

- Wants to replace traditional dispatch channels
- Needs to provide wide coverage
- Opportunity to integrate PoC with other services

Service Provider

- Requires the ability to provide new types of service.

B.14.2.2 Actor Specific Benefits

Participants

- Replaces existing capabilities with equivalent services on standard equipment and with upgrades to integration with additional services.

Host

- Lowers costs through use of non-specialised terminals and shared radio resources.
- Integration with other facilities allows improvements in efficiency of fleet management.

Network operator

- Creates additional revenue stream.

Service Provider

- Provides a new type of service.
- Creates additional revenue stream.

B.14.3 Pre-conditions

The host has previously created the dispatch group, and has identified one member as the dispatcher.

B.14.4 Post-conditions

The dispatcher may convert the one-to-many-to-one call to a 1-to-1 call with the fleet member who answers.

After interacting with the fleet members, the dispatcher moves to the next action.

B.14.5 Normal Flow

A fleet member may initiate a call to the dispatcher by pressing a Talk button. The dispatcher's response is heard by all fleet members. However the fleet member's side of the conversation is not relayed to the other fleet members. While this conversation is in progress other fleet members may not access the channel.

The dispatcher initiates a dispatch call by broadcasting to all fleet members, or to a filtered subset meeting certain criteria. The return channel is open until one of the fleet members responds.

The dispatcher is notified of the identity of the fleet member. Other fleet members may not be notified of the identity of a fleet member that the dispatcher is in discussion with.

B.14.6 Alternative Flows

If necessary, the dispatcher can cut off a fleet member and open the floor to other fleet members.

B.14.7 Operational and Quality of Experience Requirements

The fleet members' PoC terminals should support speakerphone, Talk button, comfort tones, visual indicators of Floor Control. Certain common features, such as a visual user interface, may not be required in low-end dedicated terminals.

The dispatch terminal should support speakerphone, Talk button, comfort tones, visual indicators of Floor Control, tracking of active fleet members, display of speaker identity, history logs etc. It may have wired or wireless access to the network. It is likely to offer other specialized fleet management capabilities integrated with a PoC User interface.

B.15 Corporate Chat

Many situations exist where a quick and efficient communication method is needed but the need for confidentiality is very high and closed user groups are demanded.

B.15.1 Short Description

In this example a small workgroup needs to communicate quickly and privately. They work within the same company and the company has provided them with the PoC enabled terminals from the same service provider.

- A collection of stock traders from company X is considering a major move in the stock price of a stock that they are involved with.
- By mid-day the stock price continues to move and they consider what actions should be taken with the shares.
- The most senior member of the workgroup, Mike, knows his fellow traders from company X all have terminals capable of a private and secure PoC conversation.
- Mike, acting as host, sends an invitation to his co-workers to start the PoC conversation.
- Tom, one of the invitees is caught in another panic trading situation and can't join immediately. He ignores the first invitation and joins a couple of minutes later.
- The conversation proceeds and the stocks are traded within a few minutes after the call has started.

B.15.2 Actors

- PoC Participants: Tom, Peter, Paul and Mary

- PoC Host: Mike is acting as the host.
- PoC Company: Company X has made it possible for this workgroup to have a PoC conversation and is paying the bill for the PoC service.
- Service provider

B.15.2.1 Actor Specific Issues

PoC Participants

- Want to be able to communicate quickly as stocks are volatile and can have significant financial impact.
- Want easy to use handsets with headsets for hands-free use to allow private conversations.
- Want PoC terminals with good voice quality so trading instructions are understood.

Service Provider

- Provides corporate customers a service for business critical applications

Company X

- Company X must have closed confidential user groups to ensure that conversations cannot be overheard and that eavesdroppers are excluded.
- Unauthorised disclosure of the actual names of Group members to third parties must be prevented.
- Secure media link so that conversations cannot be intercepted.

B.15.2.2 Actor Specific Benefits

PoC Participants:

- Trusted and secure system that enables large value stock trades.

PoC Host

- Efficient workgroup communication, which can be leveraged to increase revenue for the company with a solid coordinated effort in selling or buying stocks.

Service Provider

- Increased revenue from corporate customers.

B.15.3 Pre-conditions

All PoC group participants are enabled to use the PoC service and have PoC compatible terminals. All PoC group participants have connectivity to PoC Service Provider through their company subscription.

The group has been authorized and made available for designed employees using company-approved methods for confidentiality,

B.15.4 Post-conditions

When the call comes to an end, the host terminates the call knowing that all will execute the trade instructions.

B.15.5 Normal Flow

- Mike knows that there is a problem in the morning and might even warn his co-workers via e-mail, Instant Message or PoC that they should be prepared for this afternoon trade discussion.
- In the Afternoon the value of some stock continues to move and Mike decides to initiate a conversation with the team using a predefined group name.
- Various people accept the PoC conversation and get their instructions at that time. Any concerns are voiced and a consensus is reached.
- The trade is agreed to and the stock is traded.

B.15.6 Alternative Flow

- An alternative situation Mike forgets to warn his co-workers of what he is planning.
- His attempt to schedule a meeting finds only a small subset of the team available.
- Those that are left and have successfully connected to the PoC service, discuss the situation.
- They have the discussion; Mike decides to call off the trade. He then sends an e-mail, or Instant Message to the team to inform them what has happened.

B.15.7 Operational and Quality of Experience Requirements

- The PoC Service Entity should allow the subscriber to affect and authorize the groups that can be used by the user.
- The PoC capable terminal should have a headset in addition to the speaker.
- The PoC Service Entity should allow corporate PoC calls to have integrity and confidentiality.
- The PoC Service Entity should allow the company to manage naming identities that are commonly used within the company
- The PoC Service Entity should allow the company to use a name space within the company that is independent from the addressing used within the PoC Network.

B.16 PoC Video Sharing

This use case is based on PoC V2.0 functionality.

B.16.1 Short Description

PoC video sharing is a way to share a live-streamed video between Participants while being in a PoC Session and using PoC for voice communication. The live-streamed video can be applied to 1-to-1 PoC Sessions as well as to PoC Group Sessions.

The video stream is half-duplex as the voice stream in PoC i.e., only one Participant can use video streaming at the same time.

This bullet list below provides the prose description of how the basic PoC video sharing service may be used.

- Monica is studying Information Architecture at the University of Milan and working extra as an exhibition hostess for one of the big international trade fair companies. She has a large network of friends that she need to stay in touch with so she communicates a lot using different means like messaging, chatting, calling etc.
- It's Friday and Monica will take a trip to Bologna to see her boyfriend and some of their friends. Monica and her boyfriend Vittorio will spend the weekend together with friends having a real party weekend. Monica's train is leaving the Milan Centrale just after lunch and she feel really energized and in a good weekend mood. Monica decides to boost up her friends party modes by sharing a live-streamed video with them.
- She selects from the buddy list the PoC Group she wants to share the video with, presses the PoC button and selects the video-mode. She starts talking and humming at the same time as she is filming some street musicians in concert at the Centrale ending the message with "See you soon".
- She gets some comments from Vittorio and Mauro.

B.16.2 Actors

- Host: Monica is acting as host.
- Participants: Vittorio and Mauro are acting as Participants.
- PoC Network operator
- PoC Service Provider

B.16.2.1 Actor Specific Issues

Host

- Want to communicate to a PoC Group using voice and potentially live-streamed video.

- Want easy to use handsets, with fast methods of selecting video mode and initiating a PoC video sharing Session.
- Want reasonably good voice and video quality.

Participants

- Want to respond quickly to the PoC Group by communicating using voice and potentially live-streamed video.
- Want easy to use handsets, with fast methods of selecting video mode and initiating a PoC video sharing Session.
- Want reasonably good voice and video quality.

PoC Network operator

- Want to increase traffic in their packet switched network.

PoC Service Provider

- Wants to attract customers to new service.
- Wants to reduce subscriber churn to other network providers.
- Wants to maximise potential for IP-services, offering new revenue generating service.

B.16.2.2 Actor Specific Benefits

Host and Participants

- Ease and speed of placing a video and/or voice stream to a PoC Group and thus sharing the moment with family and friends

PoC Network provider

- Takes revenue from increased traffic in their packet switched network due to PoC video sharing.

PoC Service Provider

- Takes revenue from offering the service PoC video sharing.

B.16.3 Pre-conditions

Monica, Vittorio and Mauro have PoC video sharing capable terminals and PoC video sharing service subscriptions and have powered-on their phones. Monica, Vittorio and Mauro have registered with the PoC Network for the PoC Service.

B.16.4 Post-conditions

All three members of the ongoing PoC Session may at any given time choose video mode and start to sharing video.

B.16.5 Normal Flow

1. Monica selects the PoC Group she wants to contact from the buddy list
2. Monica selects the video mode and presses the PoC button, which will start the video recording and transmission of the live-streamed video to the other Participants.
3. Vittorio and Mauro get an indication of incoming video
4. Vittorio and Mauro accept the incoming video and are able to see the video from Monica
5. Monica releases the PoC button when she wants to end the transmission of video
6. Vittorio presses the PoC button replying to the PoC Group with voice only and releases it when ready
7. Mauro presses the PoC button replying to the PoC Group with voice only and releases it when ready
8. Mauro selects the video mode and presses the PoC button, which will start the video recording and transmission of the live-streamed video to the other Participants.
9. Vittorio and Monica get an indication of incoming video.
10. Vittorio and Monica accept the incoming video and are able to see the video from Mauro.

11. Mauro releases the PoC button when he wants to end the transmission of video.

B.17 PoC Box

This use case is based on PoC V2.0 functionality.

B.17.1 Short Description

This use case depicts a situation, where a PoC User A wants to initiate a PoC Session with PoC User B but the PoC User B is not available. Instead of PoC User B being alerted the PoC Service Infrastructure establish a PoC Session between PoC User A and a PoC Box.

B.17.2 Actors

The involved actors are:

- PoC Users A and B
- PoC Service Provider

B.17.2.1 Actor Specific Issues

None identified

B.17.2.2 Actor Specific Benefits

The benefits for the actors are:

- The PoC Service, enhanced by a "PoC Box" enables PoC Users to initiate a 1-1 PoC Session even if the Invited PoC User is currently unavailable.
- As the PoC Service becomes more attractive to end-users through this feature the PoC Service Provider may attract more customers.

B.17.3 Pre-conditions

The required pre-conditions are:

- The PoC User A has initiated a 1-1 PoC Session to PoC User B; and,
- The PoC Service has detected (e.g., by presence service) that the PoC User B is currently unavailable.

B.17.4 Post-conditions

The required post-conditions are:

- PoC User A has declined the offer of the PoC Service to establish a PoC Session with PoC User B's PoC Box; or,
- A PoC Session between the PoC User A and PoC User B's PoC Box is established.

B.17.5 Normal Flow

The normal flow for this use case is:

- The PoC User A selects the PoC User B and pushes the PoC button.
- The PoC Server Infrastructure detects that the PoC User B is unavailable and redirects the invitation to the PoC User B's PoC Box.
- The PoC Box accepts the invitation and the PoC User A is notified that a PoC Box has accepted the invitation instead of the PoC User B.
- PoC User A releases the PoC button in order to listen to the message.
- The PoC User A receives a voice message: "The PoC User B is not available. Do you want to leave a message for him?"

- The PoC A pushes the PoC button again and leaves a message.
- After a while PoC User B is available again (the PoC Service Infrastructure may monitor PoC User B's presence information).
- The PoC Service Infrastructure initiates a 1-1 PoC Session with the PoC User B, acting in place of PoC User A, but indicating to the PoC User B that this is a stored PoC Media, and sends the recorded Talk Burst to PoC User B.

B.17.6 Alternative Flow

There are three different alternative flows:

- The PoC User A may decide to not leave a message; or,
- The PoC User B receives the invitation to a PoC Session but redirects the invitation to the PoC Box; or,
- The PoC User A selects the PoC User B and decides to leave a message in PoC User B PoC Box directly before pushing the button. The invitation to a PoC Session is sent directly to the PoC Box without being offered to the PoC User B.

B.17.7 Operational and Quality of Experience Requirements

- The PoC Service Provider need to provision the PoC Box service to PoC Subscribers.
- The PoC Service Provider needs to provide suitable announcements to the PoC User A and the PoC User B.

B.18 The PoC Dispatcher

This use case is based on PoC V2.0 functionality.

B.18.1 Short Description

This Use Case presents a practical example of the use of PoC for the communication between professionals. For these purposes, a special PoC Client with advanced capabilities is used to coordinate the fleet of professionals. This special PoC Client receives the name of PoC Dispatcher and is used by the fleet Managers.

B.18.2 Actors

A Highway Maintenance Company is under charge of the maintenance of a group of nested highways. The company uses PoC for the communication between its workers and has four fixed IP PoC Clients (PCs) in a Control Center connected to two routers. All of them are fixed PoC Dispatchers.

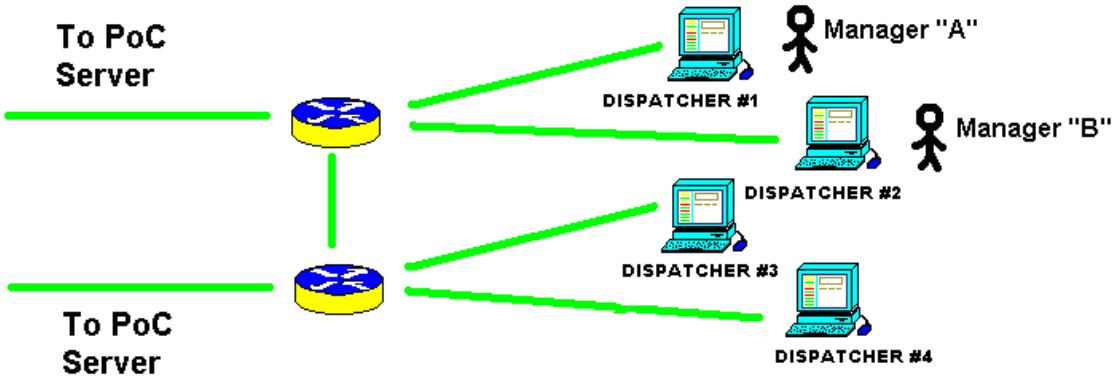


Figure 3: PoC Dispatch Network Use Case Example

- There are two Managers taking care of the coordination of the whole fleet. They optimally organize the regularly scheduled actions as well as any emergency situation that may happen. To carry out their job, they use the 4 PoC

Dispatchers. As an additional help, they also receive the GPS position of the PoC Fleet Members from the Control Center.

The PoC Fleet Members, located in service vehicles, are divided into 2 subgroups: Maintenance Group (10 PoC Users) and Crane Group (10 PoC Users). All vehicles are equipped with a GPS system that regularly delivers the geographical position to the Control Center by non-PoC means.

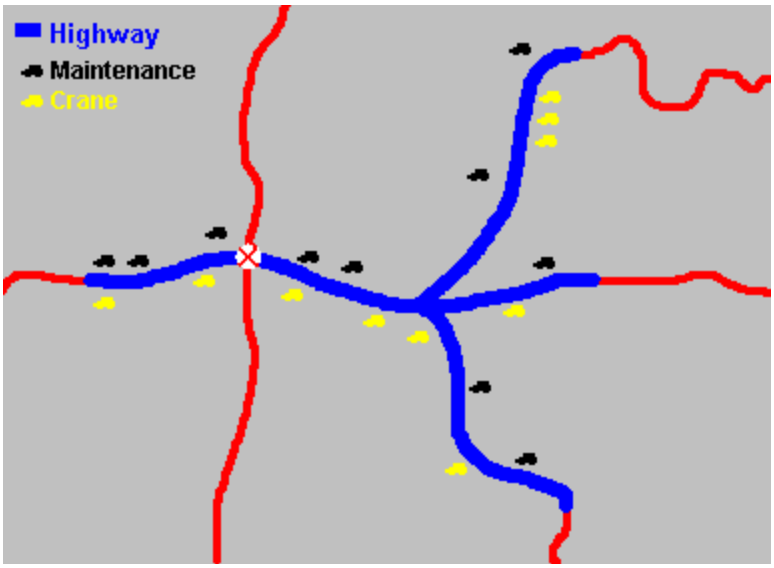


Figure 4: PoC Dispatch Scenario Use Case Example

B.18.2.1 Actor Specific Issues

PoC Fleet Members

- They want to quickly receive PoC calls from their Manager, in order to allow a fast coordination and fast action.
- In addition to voice, they may need to receive and transfer other types of Media from/to the Manager.
- They must contact any Manager if an emergency situation occurs, although their assigned Manager is busy in that moment.
- In general, they do not really need to talk directly to other PoC Fleet Members when having a Group PoC Session.
- Some PoC Fleet Members should not call to other PoC Fleet Members directly, to avoid waste of time.

Managers

- The Managers want to quickly talk to any of the PoC Fleet Members under their charge.
- The Managers want to quickly talk to the whole group of PoC Fleet Members under their charge, but they want to be the only ones that receive the responses back.
- The Managers may need to individually restrict the outgoing PoC Sessions of their PoC Fleet Members, in order to avoid unnecessary conversations. These preconfigured restrictions need to be easily changed when necessary.
- Managers may need to manually divert an already established PoC Session to other PoC Dispatcher at any moment. Moreover, they need the automatic redirection of a new incoming PoC Session if they are busy.

PoC Service Provider

- He wants to offer a closed PoC Group communication service with a high added value for a specific “niche market”.

B.18.2.2 Actor Specific Benefits

PoC Fleet Members

- Fast voice and data communications.

- They can rely on a robust and organized communication mechanism that helps them in their daily work.

Managers

- Fast and easy way to talk and exchange other type of Media with the PoC Fleet Members, either individually or with all of them at once.
- A Manager has not to worry when he is busy since he knows that any new incoming call will be redirected to other PoC Dispatcher.
- Full control over the communications of the PoC Fleet Members. This optimizes the overall PoC Group communication and guarantees that the Manager will contact any of the PoC Fleet Members in all situations.

PoC Service Provider

- To obtain a “niche market”.
- To offer advanced solutions in Dispatch Services to professional customers.

B.18.3 Pre-conditions

- PoC Dispatcher #4 is diverted to PoC Dispatcher #2 by default.
- PoC Dispatcher #3 is diverted to PoC Dispatcher #1 by default.
- PoC Dispatcher #2 is diverted to PoC Dispatcher #1 if busy, and vice versa.
- It has been forbidden for Crane #3 to speak with Crane #4.
- All PoC Fleet Members, with their PoC terminals, are on the highway waiting for any indication from the Manager.
- Two Managers are on PoC Dispatcher #1 and #2 waiting for an event.
- An accident is going to happen.

B.18.4 Post-conditions

The nearest Cranes have picked up the cars involved in the accident and the Maintenance Group has cleared the asphalt.

B.18.5 Normal Flow

- Based on non-PoC means, Manager A and B can view the geographic position of the PoC Fleet Members from a map on the screen of their special PoC Dispatcher Clients. The vehicles refresh their GPS position every 50 metres or 30 seconds.
- An accident has just happened in the highway. Manager A, from PoC Dispatcher #1, observes the state of the 10 components of the Maintenance Group. All of them are ready and he initiates a PoC Session to the Maintenance PoC Group. All of them accept the invitation and the 10 PoC Clients are included in the Maintenance PoC Group Session.
- Manager A orally explains the situation to the included PoC Fleet Members and, to avoid any confusion, informs that a text message is being sent to all of them with a description of the accident.
- Manager A is also viewing the GPS position of all the vehicles and, using the already established PoC Session, he orders the nearest Maintenance Vehicles to go to the accident location. The rest of vehicles must remain in standby.
- From PoC Dispatcher #2, Manager B calls the Crane PoC Group. 10 PoC Clients and their state are shown on the Manager's screen. A crane is out of coverage so it has not received the invitation. 9 Cranes automatically accept the call and are included in the PoC Session. They are ready to listen to the Manager’s indications. The Manager explains the operative procedures to be followed.
- The Crane that was out of coverage leaves that state and receives a late invitation to join the Crane PoC Group Session. He automatically accepts and PoC Dispatcher #2 is notified accordingly. The Manager B explains again the operative procedures to him and the rest of the group. Finally, Manager B closes the Crane PoC Group Session.

- One Crane initiates a 1-to-1 PoC call to the PoC Dispatcher #3. This PoC Dispatcher has no Manager and, therefore, is redirected to PoC Dispatcher #1 (pre-condition), but #1 is still busy. For that reason, the PoC call is automatically diverted again to PoC Dispatcher #2 as previously configured (pre-condition).
- Later on, Manager A, with the Maintenance PoC Group Session still open, realizes that his loudspeaker is not working correctly and decides to manually redirect the PoC Session to PoC Dispatcher #4 because it is not being used, and he continues with the Maintenance PoC Group Session.
- Manager A finishes the Maintenance PoC Group Session.
- Manager B, from PoC Dispatcher #2, closes the 1-to-1 PoC Session with the Crane.

B.18.6 Alternative Flow

- Crane #3 tries to make 1-to-1 PoC call to Crane #4. This is preconfigured to be forbidden and the PoC Session establishment is rejected (pre-condition).

B.18.7 Operational and Quality of Experience Requirements

- Managers should never find the PoC Clients they need to contact with as being busy. They also may want to request automatic acceptance of the call.
- PoC Fleet Members could have the outgoing PoC calls restricted so as to speak only to the Managers.
- Accidents require a fast coordination. The PoC V2.0 Service Enabler offers the technical solution to provide this fast service.
- The call-redirection capability of the PoC Dispatcher makes it easier to find a Manager with no PoC Session in progress, which in turn enhances the reliability of the service.
- Managers receive the GPS position from the vehicles without interfering ongoing PoC Sessions.

B.19 Browser-Based PoC Client Invocation

This use case is based on PoC V2.0 functionality.

B.19.1 Short Description

This use case describes a scenario where a PoC User Alice initiates an Ad-hoc PoC Group Session to Bob, Carol and David, who are members of one of her PoC Groups, Ski_Buddies, using the browser in her handset that talks to the Web server provided by the PoC Service Provider. Right after Alice selects the three members and clicks the “CALL” button on the browser, the PoC Client is invoked seamlessly and automatically, and the Ad-hoc PoC Group Session is initiated.

B.19.2 Actors

The involved actors are:

- PoC Users; Alice, Bob, Carol, David and Edward.
- PoC Service Provider

B.19.2.1 Actor Specific Issues

- Alice, Bob, Carol, David and Edward are members of a Pre-arranged PoC Group, Ski_Buddies.
- The PoC Service Provider provides value added services concerning to PoC Groups in addition to standard PoC Services. One of the value added services is to provide useful information that interests certain groups.

B.19.2.2 Actor Specific Benefits

The benefits for the actors are:

- The PoC Users are able to initiate PoC Sessions seamlessly while they are browsing on the browser. This enhances convenience and increases usability of the PoC Service.

- The PoC Service Provider is able to provide PoC Group information, user interfaces and any other information flexibly and dynamically on the browser.
- The PoC Service Provider is able to generate more PoC traffic as PoC Users use the PoC Service more frequently. There is a possibility to charge additional fee for such Web based premium information services and increase ARPU-Average Revenue Per User.

B.19.3 Pre-conditions

The required pre-conditions are:

- A Pre-arranged PoC Group, Ski_Buddies, includes Alice, Bob, Carol, David and Edward as its members.
- The Web server has proprietary mechanisms to provide Web pages combining information of PoC Groups taken from the XDM server and information which may be taken from other Web sites in the Internet.

B.19.4 Post-conditions

The required post-conditions are:

- A PoC Session is initiated.

B.19.5 Normal Flow

The normal flow for this use case is:

- Alice connects to the Web server using the browser in her handset.
- The Web server is provided by the PoC Service Provider.
- The Web server authenticates Alice and presents Alice's home page on her browser.
- The home page presents a list of PoC Groups for which Alice is a member, along with other information such as news, offers, etc.
- Alice selects one of her PoC Groups, Ski_Buddies, on the browser.
- The browser presents a list of members of Ski_Buddies as well as updates of certain ski resort. The updates contain such information as dates, time, current weather, snowfall, forecast, wind, temperature, near real time pictures of the resort, etc.
- Since the condition looks perfect, using the PoC Service, Alice decides to talk to Bob, Carol and David to discuss their trip to the ski resort tomorrow. Alice knows that Edward is not available due to his trip abroad and she does not attempt to call him.
- Alice selects Bob, Carol and David and clicks the "CALL" button on the browser.
- The PoC Client is automatically invoked by clicking the "CALL" button and an invitation is sent to Bob, Carol and David. The four people start to talk in the Ad-hoc PoC Group call mode and discuss their ski trip tomorrow.
- Nete: If Alice selects only one person, it becomes a 1-1 PoC Session.

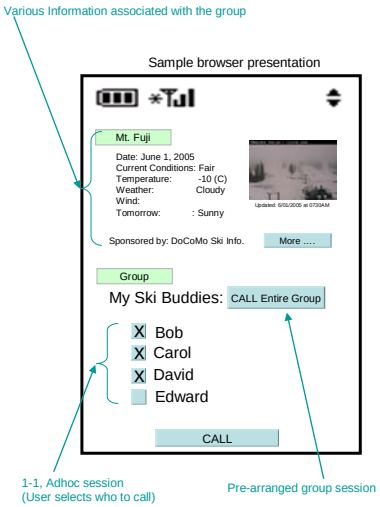


Figure 5: An Example of browser presentation.

B.19.6 Alternative Flow

An Alternative flow for this use case is:

- Instead of selecting each member whom Alice wants to talk to, Alice selects the “CALL ENTIRE GROUP” button. In this case, Alice knows that everyone should be available.
- The PoC Client is automatically invoked by clicking the “CALL Entire Group” button and an invitation is sent to everyone in the PoC Group. The Participants start to talk in the Pre-arranged PoC Group Session mode and discuss their ski trip tomorrow.

B.19.7 Operational and Quality of Experience Requirements

- Invocation of the PoC Client and initiation of a PoC Session from browsing should be as seamless and automatic as possible.

B.20 Invitation Reservation

This use case is for a future release of PoC.

B.20.1 Short Description

According to an authorized PoC User’s condition setting on PoC invitation reservation, the PoC Service Infrastructure automatically initiates PoC Sessions on behalf of the authorized PoC User. The PoC Service Infrastructure initiated PoC Session establishment can be triggered by the PoC Session start-up time, reservation timeout value, presence information, and triggering parameters (e.g., when at least one invitee or all invitees becomes available), etc.

B.20.2 Actors

- PoC Users: A, B and C
- PoC Service Infrastructure

B.20.2.1 Actor Specific Issues

The authorized PoC User A:

- Doesn’t want to waste much time on checking the PoC User B’s variable presence information or trying to invite the PoC User B, repeatedly.
- Requests that the PoC Service Infrastructure initiate a 1-1 PoC Session or a Group PoC Session on behalf of himself.

The PoC Service Infrastructure:

- Checks whether to invite the PoC Users A and B according to authorized PoC User A's condition setting.
- Invites the PoC Users A and B according to the authorized PoC User A's request, thus provides more convenient PoC Service.

B.20.2.2 Actor Specific Benefits

The authorized PoC User A:

- Doesn't need to spend much time on checking PoC User B's variable presence information or trying to invite the invitee, B, repeatedly.

The PoC Service Infrastructure:

- Can generate new revenue model through its rich functionality.

B.20.3 Pre-conditions

- The PoC User B cannot be invited due to some reasons.
- The authorized PoC User A requests the PoC Service Infrastructure to reserve PoC Session invitation.
- PoC Service Infrastructure can invite both PoC Users A and B for the PoC Sessions.

B.20.4 Post-conditions

- The PoC Users A and B finish their PoC communication and terminate their PoC Sessions.

B.20.5 Normal Flow

- The authorized PoC User A tries to call the PoC User B. But the PoC User B isn't currently available for some reason.
- The authorized PoC User A requests the PoC Service Infrastructure to reserve a PoC Session invitation by setting conditions of the invitation reservation according to his preferences, e.g., PoC Session start-up time, reservation timeout value, and presence information.
- PoC Service Infrastructure checks the conditions set by the authorized PoC User A and checks whether both PoC User A and B can be invited.
- When all conditions are satisfied and both the PoC Users A and B can be invited the PoC Service Infrastructure initiates to establish the reserved PoC Session.
- After the PoC Users A and B accept the PoC Session invitation, the PoC User A starts to talk and they enjoy the PoC Session.

B.20.6 Alternative Flow

- The authorized PoC User A tries to call the PoC Users B and C. But the PoC Users B and C aren't currently available for some reason.
- The authorized PoC User A requests the PoC Service Infrastructure to reserve a PoC Session invitation by setting conditions of the invitation reservation according to his preferences, e.g., PoC Session start-up time, reservation timeout value, presence information and triggering parameters (e.g., when all invited PoC Users become available).
- PoC Service Infrastructure checks the conditions set by the authorized PoC User A and checks whether all the PoC Users A, B and C can be invited.
- When all conditions are satisfied and all the PoC Users A, B and C can be invited the PoC Service Infrastructure initiates to establish the reserved PoC Session.
- After the PoC Users A, B and C accept the PoC Session invitation, the PoC User A starts to talk and they enjoy the PoC Session.

B.20.7 Operational and Quality of Experience Requirements

- Conduct of initiating PoC Session by a PoC Service Infrastructure should not affect the PoC Users to initiate other PoC Sessions.

B.21 Demonstrating the Use of PoC interworking

This use case is based on PoC V2.0 functionality.

B.21.1 Short Description

This use case shows, through the use of PoC interworking capability, how the PoC User experience can be extended beyond the boundaries of the PoC Network. This expansion includes allowing the PoC User to communicate via PoC V2.0 with External P2T Network users. Also illustrated is how a PoC User can use PoC Service when situated beyond the direct reach of a PoC Network.

B.21.2 Actors

B.21.2.1 Service Providers

- POC-R-US: A PoC Service Provider with a PoC V2.0 Service offering.
- EZ-P2T: A service provider with a proprietary P2T service offering.
- SmallFryNet: A wireless service provider without IMS or data capability (voice only).
- Joe's Bar, Grill & Wireless Clearing House: A wireless interworking service provider with PoC V2.0 interworking capabilities among its product offerings.

B.21.2.2 Subscribers

- Mangrove Swamp Securities: A financial instrument trading company recently formed by the merger of two smaller companies (Banyan Derivatives – a subscriber of POC-R-US' PoC V2.0 service and Pine Tar Bonds – a subscriber of EZ-P2T's P2T service)

B.21.2.3 Users

- Josh: A trader with Mangrove Swamp Securities, from Pine Tar Bonds before the merger. A user of EZ-P2T.
- Sam: A trader with Mangrove Swamp Securities from Banyan Derivatives before the merger. A user of POC-R-US.
- Trudy: Supervisor of the combined trading groups in Mangrove Swamp Securities. A user of EZ-P2T.
- Jesse: Mangrove Swamp Securities inbound call center specialist dealing with premium accounts. User of Mangrove Swamp Securities' internal voice enabled instant messaging system.
- Roger: Sales representative with Mangrove Swamp Securities from Banyan Derivatives before the merger. A user of POC-R-US.

B.21.2.4 Actor Specific Issues

- Mangrove Swamp Securities: Has just completed a merger and not completed the wireless communication planning including deciding on any user migration between existing service provider networks. Until the wireless communication planning is complete, wants to maintain existing connectivity and ensure similar levels of service across the two contracted network providers (EZ-P2T, POC-R-US).
- POC-R-US, EZ-P2T: Wants to ultimately gain Mangrove Swamp Securities' entire communication business.
- Joe's Bar, Grill & Wireless Clearing House: Increased usage of interworking service increases revenue. A key goal of this increased use is seamless user experience of the interworking features.
- Josh, Sam, Trudy: Wants to continue to access contacts in their pre-merger groups, but also reach staff from new post-merger groups with equal ease.

- Jess: Wants to be able to reach all Mangrove Swamp Securities traders from her desktop station in the call center regardless of pre-merger company location.
- Roger: Wants to be able to reach internal Mangrove Swamp Securities staff regardless of where he is roaming and regardless of the serving operator's capabilities.

B.21.2.5 Actor Specific Benefits

- Mangrove Swamp Securities: Able to select the most appropriate service plan without having the short term pressure because their existing service providers are able to continue service for all staff members through interworking.
- POC-R-US, EZ-P2T: Are able to assemble a better sales effort to try to win Mangrove Swamp Securities' entire business. Also are able to demonstrate technical strengths through interworking.
- Joe's Bar, Grill & Wireless Clearing House: Able to maintain heightened traffic and revenue levels by pitching to Mangrove Swamp Securities the value of maintaining existing dual operator subscription.
- Josh, Sam, Trudy, Jess, Roger: Able to communicate with Mangrove Swamp Securities staff using the tools they have been trained on to reach all employees in the newly combined company.

B.21.3 Pre-conditions

- EX-P2T and POC-R-US have a business agreement to provide PoC Network to External P2T Network interworking between their subscribers and to use Joe's Bar, Grill & Wireless Clearing House to provide this PoC Network to External P2T Network interworking between their respective networks.
- SmallFryNet has a standard voice only roaming agreement with POC-R-US.
- Joe's Bar, Grill & Wireless Clearing House has an enterprise business agreement with Mangrove Swamp Securities to provide interworking capability between the internal voice enabled instant messaging system and other Mangrove Swamp Securities users with POC-R-US and EZ-P2T.
- Roger is at a customer site on a sales call and his only wireless coverage is SmallFryNet without PoC Service.
- Josh, Sam, Trudy and Jess's devices are registered in their respective networks and are authorized to use the interworking capability.

B.21.4 Post-conditions

The users have been able to establish PoC Sessions through the PoC V2.0-External P2T Network interworking capability to meet the communication needs of their work activities regardless of which network (EX-P2T or POC-R-US) the initiator and recipients reside in.

B.21.5 Normal Flow

1. Roger, in sales call, encounters a situation where he needs to include subject matter experts on a particular financial instrument.
2. Roger, unsure of which trader handles this particular financial instrument, decides to reach Trudy.
3. Since Roger is outside of the connectivity with POC-R-US, he uses the remote access capability of Joe's Bar, Grill & Wireless Clearing House by using the voice service of SmallFryNet to reach a designated access number.
4. The Joe's Bar, Grill & Wireless Clearing House remote access identifies and authenticates Roger for PoC Remote Access.
5. Roger initiates a PoC Session with Trudy, asks her who is responsible for the particular financial instrument.
6. The PoC Session to Trudy is extended through the Joe's Bar, Grill & Wireless Clearing House interworking to the EZ-P2T network.
7. Trudy decides that both Josh and Sam need to be involved. Trudy extends the PoC Session to them.
8. The PoC Session to Josh is extended through the Joe's Bar, Grill & Wireless Clearing House interworking to the EZ-P2T network.

9. The customer is allowed to participate in the presentation of the specific items through Roger's speaker phone.
10. The customer is satisfied, agrees to the purchase and the communication session is terminated.

B.21.6 Alternative Flow

The first alternative flow can substitute Jesse to set up a communication session instead of Roger with any combination of Trudy, Sam and Josh.

Other alternative flows can have the PoC Session set up by any Mangrove Swamp Securities staff member to any other staff member(s) regardless of whether they are users of EZ-P2T, POC-R-US or the internal voice enabled instant messaging system.

B.21.7 Operational and Quality of Experience Requirements

From this use case, several QOE requirements are clearly identified:

- It is important to maintain the current user experience for both the External P2T Network users and PoC Users.
- It is important to have the interworking between PoC Networks and External P2T Networks be as seamless as possible on the user QOE for such things as performance and user interfaces.
- With the number of different External P2T Networks that may be available to the PoC User, the interworking capability needs to be generic and flexible enough to deal with any and all of them.

B.22 Dynamic PoC Groups

This use case is based on PoC V2.0 functionality.

B.22.1 Short Description

This use case describes the use of Dynamic PoC Groups. The members of Dynamic PoC Groups are selected according to rules that are specified for the PoC Group.

Dynamic PoC Groups may be used as follows:

- A PoC User defines a Dynamic PoC Group by choosing other PoC Users and additionally specifying rules for dynamically selecting some of the chosen PoC Users.
- The PoC User sets up a PoC Session by inviting the defined Dynamic PoC Group.
- Only the chosen PoC Users that also satisfy the Dynamic PoC Group's rules are invited to the PoC Session.
- Participants are automatically expelled from the PoC Session as soon as they don't match the Dynamic PoC Group's selection rules anymore.
- Chosen but non-participating PoC Users are automatically invited to an ongoing PoC Session as soon as the Dynamic PoC Group's selection rules are matched.

B.22.2 Actors

The involved actors are:

- Host: PoC User Andrew
- Participants: PoC Users Brian, Chris, Doris, Eric and Fabio
- PoC Network Operator
- PoC Service Provider

B.22.2.1 Actor Specific Issues

Host:

- Wants to communicate to known PoC Users that satisfy certain conditions.

- Does not want to communicate to known PoC Users that do not satisfy certain conditions.
- Wants to communicate to unknown PoC Users that satisfy certain conditions.
- Does not want to communicate to unknown PoC Users that do not satisfy certain conditions.
- Wants to communicate to PoC Users only when they satisfy certain conditions.
- Does not want to take care of inviting and expelling PoC Users according to certain conditions during an ongoing PoC Session.

Participants:

- Want to be invited to PoC Sessions that are relevant to them.
- Do not want to be invited to PoC Sessions that are not relevant to them.
- Want to participate in PoC Sessions only when the PoC Sessions are relevant to them.

PoC Network Operator:

- Wants to increase traffic in his packet switched network.

PoC Service Provider:

- Wants to attract customers to new services.
- Wants to reduce subscriber churn to other network providers.
- Wants to maximise potential for IP-services, offering new revenue generating services.

B.22.2.2 Actor Specific Benefits

Host:

- Does not invite PoC Users that are not relevant to his PoC Session.
- Does invite unknown PoC Users that are relevant to his PoC Session.
- Communicates to other PoC Users only as long as they are relevant to his PoC Session.

Participants:

- Are not invited to PoC Sessions that are not relevant to them.
- Are invited to relevant PoC Sessions although the Participants are not known to the PoC Sessions host.
- Communicate in PoC Sessions only as long as the PoC Sessions are relevant to them.

PoC Network Operator:

- Takes revenue from additional traffic with unknown PoC Users.

PoC Service Provider:

- Takes revenue from offering the service “Dynamic PoC Groups”.

B.22.3 Pre-conditions

The pre-conditions are:

- PoC Users Andrew, Brian, Chris, Doris, Eric and Fabio have PoC Subscriptions.
- PoC User Andrew has a PoC terminal capable of specifying Dynamic PoC Groups.
- PoC Users Brian, Chris, Doris, Eric and Fabio provided consent to become a member of a Dynamic PoC Group based on Dynamic PoC Group rules.
- PoC Users Andrew, Brian, Chris, Doris, Eric and Fabio have switched on their PoC terminals and are registered to the PoC Service.

B.22.4 Post-conditions

The post-conditions are:

- PoC Users Andrew, Brian, Chris, Doris, Eric and Fabio are participating in the same PoC Session as long as they match certain Dynamic PoC Group rules.

B.22.5 Normal Flow

PoC User Andrew is a manager and intends to invite his staff for an immediate meeting. Therefore he wants to set up a PoC Session with those members of his staff that are currently working and who are staying in the same location.

The normal flow for this use case is:

- PoC User Andrew defines a Dynamic PoC Group. He selects his buddy list “My staff” that consists of PoC Users Brian, Chris and Doris. Then he additionally specifies Dynamic PoC Group rules on “geographical location” and “working”. The rules require Group members to be in the same geographical location as PoC User Andrew and to being working.
- User Andrew initiates a PoC Session for the Dynamic Group.
- Users Chris and Doris indicated in their Presence parameters that they are currently working. User Brian is not working. Users Brian and Chris are currently staying at the same geographical location as User Andrew. User Doris is not staying at the same location.
- User Chris is invited to the PoC Session since he matches the rules defined for the invited Dynamic PoC Group. Users Brian and Doris are not invited since they don’t match the Dynamic PoC Group rules.
- PoC Users Andrew and Chris arrange an appointment for a meeting. The PoC Session continues to stay.
- PoC User Doris arrives at the same geographical location as Users Andrew, Brian and Chris.
- User Doris is automatically invited to the ongoing PoC Session. She agrees to join the meeting a little later.

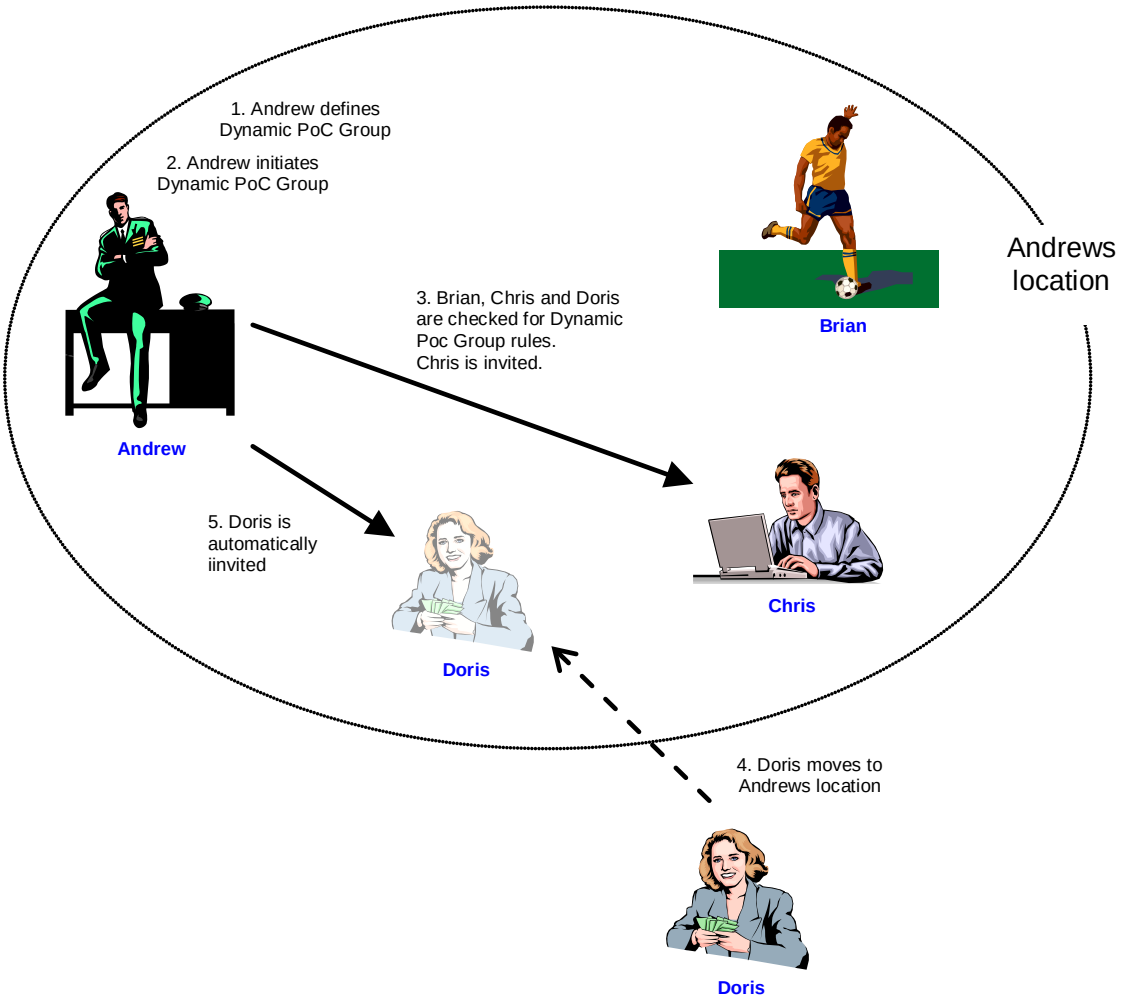


Figure 6: Use Case for Dynamic PoC Groups

B.22.6 Alternative Flow

Alternatively Dynamic PoC Groups may be based only on rules without using a pre-determined list of PoC Users. Then the scope of the search to populate the Dynamic PoC Group Members is a matter of policy for the PoC Service Provider and may or may not be restricted. An example will be given in the following alternative flow:

- PoC User Andrew intends to play soccer after work. Therefore he wants to set up a PoC Session with other PoC Users that are interested in playing soccer and who are staying in the same location. User Andrew defines a Dynamic PoC Group. He specifies Dynamic PoC Group rules on “location” and “interest”. The rules require Group members to be in the same location as PoC User Andrew and to being interested in playing soccer.
- User Andrew initiates a PoC Session for the Dynamic PoC Group.
- According to the PoC Service Provider’s Policy members of the Dynamic PoC Group are searched amongst a set of all PoC Users served by the PoC Service Provider.
- Users Chris, Doris and Fabio indicated in their user profile parameters that they are interested in playing soccer. Users Brian and Eric are not interested in playing soccer. Users Brian, Chris and Fabio are currently staying at the same location as User Andrew. User Doris is not staying at the same location.
- Users Chris and Fabio are invited to the PoC Session since they match the rules defined for the invited Dynamic PoC Group. Users Brian, Doris and Eric are not invited since they don’t match the Dynamic PoC Group rules.
- PoC Users Andrew, Chris and Fabio arrange an appointment for playing soccer. The PoC Session continues to stay.

- PoC User Doris arrives at the same location as Users Andrew, Brian, Chris and Fabio.
- User Doris is automatically invited to the ongoing PoC Session. She agrees to join for playing soccer a little later.

B.23 PoC Crisis Event handling

This use case is based on PoC V2.1 functionality.

B.23.1 Short Description

This use case describes one example of the use of PoC Crisis Event handling.

The PoC Service is expected to be used by national security, public safety and private security application. A typical use case is security guards guarding a factory.

The security guard are all the time in a PoC Group Session dedicated for the task of guarding the factory. The PoC Group has the QoE profile "Professional" which will guarantee a certain level of quality of service in the access network and priority in the PoC Network in the case there is overload situations.

Depending on number of guards in the PoC Session the group may or may not use Multicast.

One of the Participants in the PoC Group Session is an assistance that coordinates the normal operations of the guards. The assistant can be located.

In the case one of the guards detects something outside the scope of normal behaviour, e.g. a door is open by force, the security guard can report a Crisis Event by pressing a button on the PoC Client.

When a Crisis Event is reported, the PoC Group will be expanded to include more Participants, e.g. an assistant with higher authority than the normal assistant, more security guards based on the geographical location.

Figuer 6 "*Use Case for PoC Groups in Crisis Event handling*" shows illustrates how the Participants of the PoC Group Session are expanded with more Participants in the case of a Crisis Event.

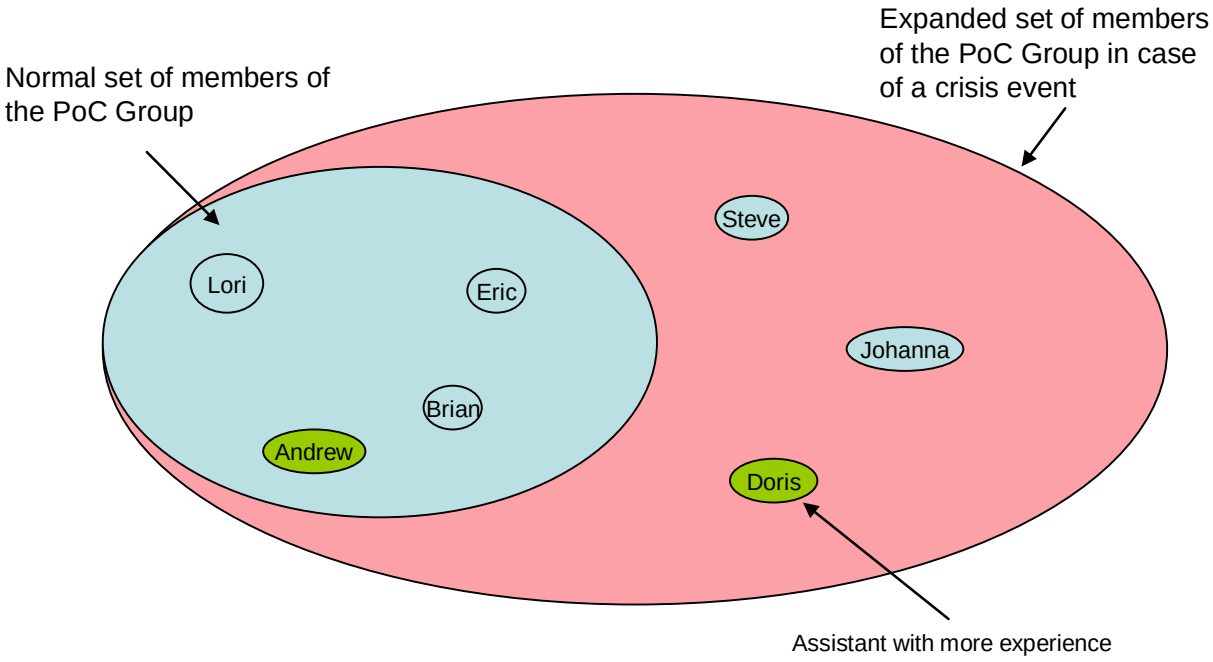


Figure 7: Use Case for PoC Groups in Crisis Event handling

B.23.2 Actors

The involved actors are:

Assistant in normal operation: Andrew

Security guard detecting the broken door: Lori

Security guards in normal operation: Eric and Brian

Assistant in a crisis situation with more experience than Andrew: Doris

Security guard close to the factory: Steve

Police called in to assist the security guards: Johanna

B.23.2.1 Actor Specific Issues

Lori:

- Wants to report the Crisis Event.

B.23.2.2 Actor Specific Benefits

Assistant in a crisis situation with higher experience:

- Can take decisions that a normal assistance with lower experience would hesitate to take.

B.23.3 Pre-conditions

The pre-conditions are:

- PoC UsersLori, Eric and Brian are guarding a factory.
- PoC User Andrew is coordinating Lori, Eric and Brian in normal operations.
- PoC User Steve, Johanna and Doris are not members of the PoC Group Andrew, Lori, Eric and Brian is using for communication.
- PoC Users Andrew, Brian, Doris, Steve and Johanna have switched on their PoC Clients and are registered to the PoC Service.

B.23.4 Post-conditions

The post-conditions are:

- PoC Users Andrew, Brian, Doris, Eric, Steve and Johanna are participating in a privileged crisis PoC Session (Pre-arranged PoC Group) as long as they are responding to the crisis.

B.23.5 Normal Flow

During an ongoing PoC Group Session one of the Participants reports a Crisis Event

This flow is characterized by:

- Other PoC Users are added to the ongoing PoC Group Session even though they would normally not be accepted as Participants in the PoC Group Session.
- Typically longer duration of PoC Session (approximately as long as there is a crisis site) with full ability to communicate to each other using Media Types that would not normally be allowed.
- Priority communication among Participants (the primary reason being that their communication may be in the presence of heavy or extraordinary network traffic, or the network capacity may be reduced by the situation).

The flow for the use case is:

1. Lori reports a Crisis Event e.g. b y pressing a dedicated button on the PoC Client.
2. The PoC Service Infrastructure authorizes the request and adds other PoC Users to the PoC Group Session. The PoC Users may be selected by the location e.g. if another security guard is very close to the location where the crisis occurred.
3. The assistant Doris communicates with Lori and decides to add a police to the communication.

4. The Participants can communicate among themselves in the crisis PoC Session with preferential treatment as long as they need and then they terminate the PoC Session.

B.23.6 Operational and Quality of Experience Requirements

Requirements defined for Professional QoE Profileare applicable.

Appendix C. User Experience (Informative)

In Figure 8 below, an end user with a PoC enabled device is illustrated interacting with a PoC Service Provider in order to participate in 1-to-1 and 1-to-many PoC calls.

The participation in PoC Sessions is only permitted once the user has applied for and been granted a subscription to access PoC services. The user can then participate in PoC Sessions, either with another PoC User or with a PoC group. As a PoC Participant, the user can participate as a member of more than one group at a time

The PoC Service Enabler supports advanced Group Lists creation & management capabilities and PoC Group Session. The user should be able to create and manage PoC Group Lists either using a terminal or a web page. Additionally, a participant in a PoC Session is called a PoC Host when he has the ability to execute capabilities such as the following: remove & block users as a result misusing - for example - a PoC Session, granting administrative rights to another PoC Participant; and creating a chat group into which users can register themselves.

The user is able to receive notifications of PoC groups available to participate in and hence request to join those groups, or he may receive invitations to participate in other PoC groups. he is able to identify which group he is participating in and retrieve a list of PoC Group Members participating in each group. Changes to group status are propagated to the PoC Participants, such as when a new user joins a group or when an existing user leaves a group.

As PoC subscribers can be subjected to potentially intrusive communications, mechanisms are provided to allow the Called Party to either accept or reject incoming PoC call alerts requesting a PoC Session by another user or group.

In addition, Reject lists can be set up by the user to block potential spamming situations, including:

- Repetitive unwanted incoming requests for PoC Sessions.

Similarly, Accept lists can be set up by the PoC Subscriber to always accept incoming calls from specific PoC Users or PoC groups with:

- Automatic Answer (voice reception is instantaneous, no recipient action required), or
- Manual Answer mode (requiring recipient action).

Subject to privacy settings of the other participants, the PoC Participant can also be notified of the status of on-going PoC Sessions, such as the arrival of new PoC Participants.

Once the PoC Participant requests to speak and is granted the right to speak, the other PoC Participant(s) in the PoC Session can listen without further action.

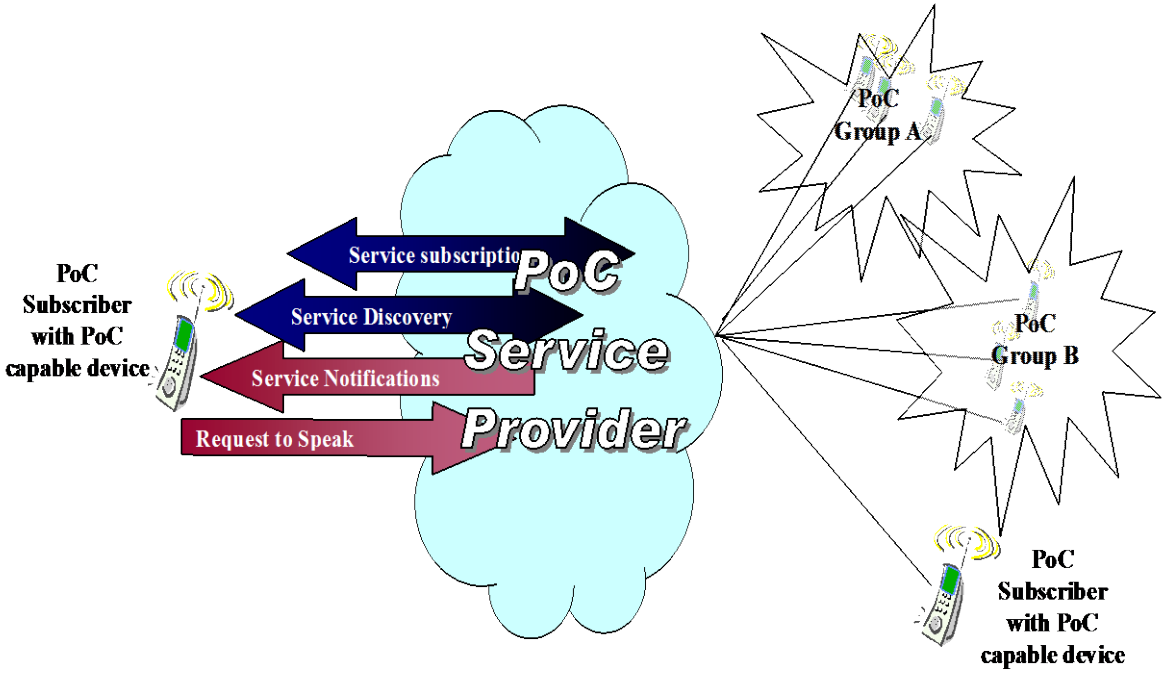


Figure 8: Basic User Experience

Note: the “PoC Service Provider” cloud may include multiple PoC Service Providers.

Appendix D. Terminal User Interface (Informative)

The following requirements pertaining to PoC terminal and user–interface requirements are considered out-of-scope of the PoC Service Enabler. These informative requirements are captured herein as issues for terminal design and development considerations in support of the PoC User services.

- Some activator mechanism (e.g. a dedicated button) may be required on the terminal for activating the PoC function. In the absence of such an activator, there should be an alternative method defined to activate the PoC function (e.g. using certain terminal keypad sequence, soft keys or touch screen action). As an option, more one PoC activator may be defined for multiple group operations.
- Loud Speaker capability should be provided on the terminal. If present, it should be possible to switch the loud speaker on/off and to regulate its audio volume.
- Where applicable, the name, display name, number or public user identities of the invited PoC User or active PoC groups should be indicated in the display. The user should be able to define what identity is displayed on the terminal.
- While in PoC mode, the user should have easy access to persons and groups he wishes to communicate with. Both keypad and contact list display may be used for person/group selection.
- To support Priority sessions, a dedicated activator (e.g. a button or some other mechanism) on the terminal may be configured as "priority" PoC Session function. The destination of the priority session may be pre-programmed and should be password protected, or may be chosen from the contact list.
- The owner of a PoC device should be able to prohibit the use of PoC chats for the device.
- Buffering of voice packets for the PoC Session may be supported at the terminal.

Appendix E. Overview of Pre-arranged, Ad-hoc and Chat PoC Groups (Informative)

The table below provides a concise overview of the differences between PoC Group (either pre-arranged or ad-hoc) sessions and Chat PoC Group Session:

Characteristic	Ad-hoc and Pre-arranged PoC Group Session	Chat PoC Group Session
Setup	Setup is initiated by a PoC Group Member. The group of PoC Users identified by the initiating PoC User may be a Pre-arranged PoC group, or an ad hoc PoC group.	Setup is initiated by a PoC Group Member or the service provider. The initiating PoC User may specify that the Chat PoC Group Session is limited to members of a specific administrated group or groups. The initiating PoC User may also specify that the Chat PoC Group is open to all PoC Users.
Session Name	The PoC System will apply the name of the group to the new group session, unless one is supplied by the initiating PoC User.	The initiating PoC User must specify a name for the Chat PoC Group.
Alerts to PoC Group Members	Alerts are automatically sent to all PoC Group Members except those having successfully applied a Do-Not-Disturb presence status	Alerts are not automatically sent. PoC Users must query the list of available Chat PoC Groups and manually select to join the Chat Group. PoC Users may notify other PoC Users of available Chat PoC Groups.
Floor Control	Standard PoC Floor Control procedures apply, i.e., half-duplex walkie-talkie style communication.	Standard PoC Floor Control procedures apply, i.e., half-duplex walkie-talkie style communication.
Termination	The Group session is terminated explicitly by one of the PoC Participants who has PoC Host status for the group session. It may also be terminated implicitly as the second last participant leaves the PoC Session. Finally, it may be administratively terminated by a PoC Group Administrator or by the service provider.	A Chat PoC Group may be administratively terminated by a PoC Group Administrator or by the service provider. A Chat PoC Group may have a termination time assigned to it. The Chat PoC Group may also be configured to terminate when the initiating PoC Participant leaves the session.

Table 78: Overview of Pre-arranged, Ad-hoc and Chat PoC Groups

Appendix F. Additional Information (Informative)

F.1 PCPS V1.0 Requirements Source Information (Informative)

This table contains source information for PCPS V1.0 Requirements. The first column is the PCPS V1.0 requirements label. The next column provides the PoC Release (1.0, 2.0, or 2.1) from which this requirement is sourced. The next column contains information on whether the requirement was left unchanged. If the requirement is unchanged then the column **Req Mod** contains the value "No." If the requirement only had editorial changes then this column contains the value "Ed." If there were any substantive changes to the requirement compared to the PoC Release Sourced then this column contains the value "Yes." The last column contains the PoC Release Sourced Requirements Label, if one exists.

PCPS V1.0 Label	PoC Release Source	Req Mod	PoC Label
PCPS-HLF-001	1.0	Yes	n/a
PCPS-HLF-002	1.0	Ed	n/a
PCPS-HLF-003	1.0	Yes	n/a
PCPS-HLF-004	1.0	Yes	n/a
PCPS-HLF-005	1.0	Yes	n/a
PCPS-HLF-006	1.0	Yes	n/a
PCPS-HLF-007	1.0	Ed	n/a
PCPS-HLF-008	1.0	Ed	n/a
PCPS-HLF-009	1.0	Ed	n/a
PCPS-HLF-010	1.0	Ed	n/a
PCPS-HLF-011	1.0	Ed	n/a
PCPS-HLF-012	1.0	Ed	n/a
PCPS-HLF-013	1.0	Ed	n/a
PCPS-HLF-014	1.0	Ed	n/a
PCPS-HLF-015	1.0	Yes	n/a
PCPS-HLF-016	1.0	Ed	n/a
PCPS-HLF-017	1.0	Yes	n/a
PCPS-OOC-001	1.0	Ed	n/a
PCPS-OOC-002	1.0	Yes	n/a
PCPS-OOC-003	1.0	Yes	n/a
PCPS-OOC-004	1.0	Yes	n/a
PCPS-OOC-005	1.0	Ed	n/a
PCPS-OMC-001	1.0	Ed	n/a
PCPS-OMC-002	1.0	Ed	n/a
PCPS-OMC-003	1.0	Ed	n/a
PCPS-OMC-004	1.0	Ed	n/a
PCPS-OMC-005	1.0	Yes	n/a
PCPS-OMC-006	1.0	Yes	n/a
PCPS-OMC-007	1.0	Yes	n/a
PCPS-OMC-008	1.0	Ed	n/a
PCPS-OMC-009	1.0	Yes	n/a

PCPS V1.0 Label	PoC Release Source	Req Mod	PoC Label
PCPS-OMC-010	1.0	Yes	n/a
PCPS-OMC-011	1.0	Ed	n/a
PCPS-OMC-012	1.0	Yes	n/a
PCPS-OMC-013	1.0	Yes	n/a
PCPS-OMC-014	1.0	Ed	n/a
PCPS-IPA-001	1.0	Yes	n/a
PCPS-IPA-002	1.0	Yes	n/a
PCPS-IPA-003	1.0	No	n/a
PCPS-IPA-004	1.0	Yes	n/a
PCPS-IPA-005	1.0	Yes	n/a
PCPS-IPA-006	1.0	Yes	n/a
PCPS-IPA-007	1.0	Yes	n/a
PCPS-SSP-001	1.0	Yes	n/a
PCPS-SSP-002	1.0	Yes	n/a
PCPS-SSP-003	1.0	Yes	n/a
PCPS-SSP-004	1.0	Yes	n/a
PCPS-SSP-005	1.0	Yes	n/a
PCPS-SSP-006	1.0	Yes	n/a
PCPS-SSP-007	1.0	Ed	n/a
PCPS-SSP-008	1.0	Ed	n/a
PCPS-SSP-009	1.0	Ed	n/a
PCPS-SSP-010	1.0	Ed	n/a
PCPS-SSP-011	1.0	Yes	n/a
PCPS-SSP-012	1.0	Yes	n/a
PCPS-SSP-013	1.0	Yes	n/a
PCPS-SSP-014	1.0	No	n/a
PCPS-SSP-015	1.0	Ed	n/a
PCPS-SSP-016	1.0	Ed	n/a
PCPS-SSP-017	1.0	Ed	n/a
PCPS-SSP-018	1.0	Ed	n/a
PCPS-SSP-019	1.0	Yes	n/a
PCPS-SSP-020	1.0	Yes	n/a
PCPS-SSP-021	1.0	Yes	n/a
PCPS-SSP-022	1.0	Yes	n/a
PCPS-SSP-023	1.0	Ed	n/a
PCPS-SSP-024	1.0	Ed	n/a
PCPS-SSP-025	1.0	Yes	n/a
PCPS-SSP-026	1.0	Yes	n/a
PCPS-SSP-027	1.0	Ed	n/a

PCPS V1.0 Label	PoC Release Source	Req Mod	PoC Label
PCPS-SSP-028	1.0	Yes	n/a
PCPS-SSP-029	1.0	Yes	n/a
PCPS-SSP-030	1.0	Yes	n/a
PCPS-SSP-031	1.0	Ed	n/a
PCPS-SSP-032	1.0	Yes	n/a
PCPS-SSP-033	1.0	Yes	n/a
PCPS-SSP-034	1.0	Yes	n/a
PCPS-SSP-035	1.0	Yes	n/a
PCPS-SSP-036	1.0	Yes	n/a
PCPS-COM-001	1.0	Ed	n/a
PCPS-COM-002	1.0	Ed	n/a
PCPS-COM-003	1.0	Ed	n/a
PCPS-COM-004	1.0	Ed	n/a
PCPS-COM-005	1.0	Ed	n/a
PCPS-COM-006	1.0	Ed	n/a
PCPS-COM-007	1.0	Ed	n/a
PCPS-COM-008	1.0	Ed	n/a
PCPS-COM-009	1.0	Ed	n/a
PCPS-COM-010	1.0	Ed	n/a
PCPS-COM-011	1.0	Ed	n/a
PCPS-COM-012	1.0	Ed	n/a
PCPS-COM-013	1.0	Ed	n/a
PCPS-COM-014	1.0	Yes	n/a
PCPS-COM-015	1.0	Yes	n/a
PCPS-COM-016	1.0	Yes	n/a
PCPS-COM-017	1.0	Yes	n/a
PCPS-COM-018	1.0	Yes	n/a
PCPS-COM-019	1.0	Ed	n/a
PCPS-COM-020	1.0	Yes	n/a
PCPS-COM-021	1.0	Yes	n/a
PCPS-COM-022	1.0	Yes	n/a
PCPS-COM-023	1.0	Ed	n/a
PCPS-COM-024	1.0	No	n/a
PCPS-COM-025	1.0	Yes	n/a
PCPS-COM-026	1.0	Yes	n/a
PCPS-COM-027	1.0	Yes	n/a
PCPS-COM-028	1.0	Ed	n/a
PCPS-COM-029	1.0	Ed	n/a
PCPS-COM-030	1.0	Ed	n/a

PCPS V1.0 Label	PoC Release Source	Req Mod	PoC Label
PCPS-COM-031	1.0	Ed	n/a
PCPS-COM-032	1.0	No	n/a
PCPS-MAN-001	1.0	Ed	n/a
PCPS-MAN-002	1.0	Ed	n/a
PCPS-MAN-003	1.0	Yes	n/a
PCPS-MAN-004	1.0	Yes	n/a
PCPS-MAN-005	1.0	Ed	n/a
PCPS-MAN-006	1.0	Yes	n/a
PCPS-MAN-007	1.0	Yes	n/a
PCPS-MAN-008	1.0	Yes	n/a
PCPS-MAN-009	1.0	Ed	n/a
PCPS-MAN-010	1.0	Ed	n/a
PCPS-MAN-011	1.0	Ed	n/a
PCPS-MAN-012	1.0	Ed	n/a
PCPS-MAN-013	1.0	Ed	n/a
PCPS-MAN-014	1.0	Ed	n/a
PCPS-MAN-015	1.0	Ed	n/a
PCPS-MAN-016	1.0	Ed	n/a
PCPS-MAN-017	1.0	Yes	n/a
PCPS-MAN-018	1.0	Yes	n/a
PCPS-MAN-019	1.0	Yes	n/a
PCPS-MAN-020	1.0	Ed	n/a
PCPS-MAN-021	1.0	Ed	n/a
PCPS-MAN-022	1.0	Yes	n/a
PCPS-MAN-023	1.0	Ed	n/a
PCPS-MAN-024	1.0	Ed	n/a
PCPS-MAN-025	1.0	Ed	n/a
PCPS-MAN-026	1.0	Yes	n/a
PCPS-MAN-027	1.0	Ed	n/a
PCPS-MAN-028	1.0	Yes	n/a
PCPS-MAN-029	1.0	Yes	n/a
PCPS-USA-001	1.0	Yes	n/a
PCPS-USA-002	1.0	Ed	n/a
PCPS-USA-003	1.0	Ed	n/a
PCPS-USA-004	1.0	No	n/a
PCPS-USA-005	1.0	No	n/a
PCPS-USA-006	1.0	Ed	n/a
PCPS-USA-007	1.0	No	n/a
PCPS-MPC-001	2.1	Ed	FUNC-USA-MC-001

PCPS V1.0 Label	PoC Release Source	Req Mod	PoC Label
PCPS-MPC-002	2.1	Ed	FUNC-USA-MC-002
PCPS-MPC-003	2.1	No	FUNC-USA-MC-003
PCPS-MPC-004	2.1	No	FUNC-USA-MC-004
PCPS-MPC-005	2.1	No	FUNC-USA-MC-005
PCPS-MPC-006	2.1	Ed	FUNC-USA-MC-006
PCPS-MPC-007	2.1	Ed	FUNC-USA-MC-007
PCPS-MPC-008	2.1	Ed	FUNC-USA-MC-008
PCPS-AMT-001	2.0	Ed	FUNC-NMT-001
PCPS-AMT-002	2.0	Ed	FUNC-NMT-002
PCPS-AMT-003	2.0	Ed	FUNC-NMT-003
PCPS-AMT-004	2.0	No	FUNC-NMT-004
PCPS-AMT-005	2.0	Ed	FUNC-NMT-005
PCPS-AMT-006	2.0	Ed	FUNC-NMT-006
PCPS-AMT-007	2.0	No	FUNC-NMT-007
PCPS-AMT-008	2.0	No	FUNC-NMT-008
PCPS-AMT-009	2.0	No	FUNC-NMT-009
PCPS-AMT-010	2.0	No	FUNC-NMT-010
PCPS-AMT-011	2.0	No	FUNC-NMT-011
PCPS-AMT-012	2.0	Ed	FUNC-NMT-012
PCPS-AMT-013	2.0	No	FUNC-NMT-013
PCPS-AMT-014	2.0	No	FUNC-NMT-014
PCPS-AMT-015	2.0	No	FUNC-NMT-015
PCPS-AMT-016	2.0	No	FUNC-NMT-016
PCPS-AMT-017	2.1	No	FUNC-NMT-017
PCPS-AMT-018	2.1	No	FUNC-NMT-018
PCPS-AMT-019	2.0	No	FUNC-NMT-019
PCPS-AMT-020	2.0	Ed	FUNC-NMT-020
PCPS-AMT-021	2.0	No	FUNC-NMT-021
PCPS-AMT-022	2.0	No	FUNC-NMT-022
PCPS-AMT-023	2.0	No	FUNC-NMT-023
PCPS-AMT-024	2.1	No	FUNC-NMT-023a
PCPS-AMT-025	2.0	No	FUNC-NMT-024
PCPS-AMT-026	2.0	No	FUNC-NMT-025
PCPS-AMT-027	2.0	No	FUNC-NMT-026
PCPS-AMT-028	2.0	No	FUNC-NMT-027
PCPS-AMT-029	2.0	No	FUNC-NMT-028
PCPS-AMT-030	2.0	Ed	FUNC-NMT-029
PCPS-AMT-031	2.0	No	FUNC-NMT-030
PCPS-AMT-032	2.0	No	FUNC-NMT-031

PCPS V1.0 Label	PoC Release Source	Req Mod	PoC Label
PCPS-AMT-033	2.0	No	FUNC-NMT-032
PCPS-AMT-034	2.1	Ed	FUNC-NMT-033
PCPS-AMT-035	2.1	No	FUNC-NMT-034
PCPS-RMC-001	2.0	No	FUNC-EPE-MC-001
PCPS-RMC-002	2.0	No	FUNC-EPE-MC-002
PCPS-RMC-003	2.0	No	FUNC-EPE-MC-003
PCPS-RMC-004	2.0	No	FUNC-EPE-MC-004
PCPS-RMC-005	2.0	No	FUNC-EPE-MC-005
PCPS-RMC-006	2.0	No	FUNC-EPE-MC-006
PCPS-RMC-007	2.0	Ed	FUNC-EPE-MC-007
PCPS-RMC-008	2.1	Ed	FUNC-EPE-MC-007a
PCPS-RMC-009	2.0	No	FUNC-EPE-MC-008
PCPS-RMC-010	2.0	No	FUNC-EPE-MC-009
PCPS-RMC-011	2.1	No	FUNC-EPE-MC-009a
PCPS-RMC-012	2.0	Ed	FUNC-EPE-MC-010
PCPS-RMC-013	2.0	Ed	FUNC-EPE-MC-011
PCPS-RMC-014	2.0	Ed	FUNC-EPE-MC-011a
PCPS-RMC-015	2.0	No	FUNC-EPE-MC-012
PCPS-RMC-016	2.0	No	FUNC-EPE-MC-013
PCPS-IPI-001	2.0	No	FUNC-EPE-PI-001
PCPS-IPI-002	2.0	No	FUNC-EPE-PI-002
PCPS-IPI-003	2.0	No	FUNC-EPE-PI-003
PCPS-IPI-004	2.0	Yes	FUNC-EPE-PI-004
PCPS-IPI-005	2.0	Ed	FUNC-EPE-PI-005
PCPS-IPI-006	2.0	No	FUNC-EPE-PI-006
PCPS-IMB-001	2.1	No	FUNC-EPE-MB-001
PCPS-IMB-002	2.1	No	FUNC-EPE-MB-001a
PCPS-IMB-003	2.1	No	FUNC-EPE-MB-002
PCPS-IMB-004	2.1	No	FUNC-EPE-MB-002a
PCPS-IMB-005	2.1	No	FUNC-EPE-MB-003
PCPS-IMB-006	2.1	No	FUNC-EPE-MB-003a
PCPS-IMB-007	2.1	Ed	FUNC-EPE-MB-004
PCPS-IMB-008	2.1	Ed	FUNC-EPE-MB-004b
PCPS-IMB-009	2.1	No	FUNC-EPE-MB-005
PCPS-IMB-010	2.1	No	FUNC-EPE-MB-005a
PCPS-IMB-011	2.0	Ed	FUNC-EPE-MB-008
PCPS-IMB-012	2.1	No	FUNC-EPE-MB-009
PCPS-ISB-001	2.1	No	FUNC-EPE-ISB-001
PCPS-ISB-002	2.1	No	FUNC-EPE-ISB-002

PCPS V1.0 Label	PoC Release Source	Req Mod	PoC Label
PCPS-ISB-003	2.1	Ed	FUNC-EPE-ISB-003
PCPS-ISB-004	2.1	No	FUNC-EPE-ISB-004
PCPS-ISB-005	2.1	No	FUNC-EPE-ISB-005
PCPS-ISB-006	2.1	No	FUNC-EPE-ISB-006
PCPS-ISB-007	2.1	No	FUNC-EPE-ISB-007
PCPS-OSB-001	2.1	No	FUNC-EPE-OSB-001
PCPS-OSB-002	2.1	No	FUNC-EPE-OSB-002
PCPS-OSB-003	2.1	Ed	FUNC-EPE-OSB-003
PCPS-OSB-004	2.1	No	FUNC-EPE-OSB-004
PCPS-OSB-005	2.1	No	FUNC-EPE-OSB-005
PCPS-OSB-006	2.1	No	FUNC-EPE-OSB-006
PCPS-OSB-007	2.1	No	FUNC-EPE-OSB-007
PCPS-OSB-008	2.1	No	FUNC-EPE-OSB-008
PCPS-ANP-001	2.1	Ed	FUNC-EPE-AN-001
PCPS-ANP-002	2.1	No	FUNC-EPE-AN-002
PCPS-ANP-003	2.1	No	FUNC-EPE-AN-003
PCPS-ANP-004	2.1	No	FUNC-EPE-AN-004
PCPS-ANP-005	2.1	No	FUNC-EPE-AN-005
PCPS-RSH-001	2.0	No	FUNC-EPE-EF-001
PCPS-RSH-002	2.0	No	FUNC-EPE-EF-002
PCPS-RSH-003	2.0	No	FUNC-EPE-EF-003
PCPS-RSH-004	2.0	No	FUNC-EPE-EF-004
PCPS-ASR-001	2.1	No	FUNC-EPE-AHC-001
PCPS-ASR-002	2.1	No	FUNC-EPE-AHC-002
PCPS-ASR-003	2.1	Ed	FUNC-EPE-AHC-003
PCPS-ASR-004	2.1	No	FUNC-EPE-AHC-004
PCPS-FDF-001	2.0	Ed	FUNC-PSC-FD-001
PCPS-FDF-002	2.0	Ed	FUNC-PSC-FD-002
PCPS-FDF-003	2.0	Ed	FUNC-PSC-FD-003
PCPS-FDF-004	2.1	Ed	FUNC-PSC-FD-003a
PCPS-FDF-005	2.0	Ed	FUNC-PSC-FD-004
PCPS-EPS-001	2.0	Ed	FUNC-PSC-EP-001
PCPS-EPS-002	2.0	Ed	FUNC-PSC-EP-002
PCPS-EPS-003	2.0	No	FUNC-PSC-EP-003
PCPS-EPS-004	2.0	No	FUNC-PSC-EP-004
PCPS-EPS-005	2.0	No	FUNC-PSC-EP-005
PCPS-EPS-006	2.0	No	FUNC-PSC-EP-006
PCPS-GRR-001	2.1	No	FUNC-PSC-RR-001
PCPS-GRR-002	2.1	No	FUNC-PSC-RR-002

PCPS V1.0 Label	PoC Release Source	Req Mod	PoC Label
PCPS-GRR-003	2.1	No	FUNC-PSC-RR-003
PCPS-GRR-004	2.1	Ed	FUNC-PSC-RR-004
PCPS-SCC-001	2.1	No	FUNC-PSC-CH-001
PCPS-SCC-002	2.1	No	FUNC-PSC-CH-002
PCPS-SCC-003	2.1	No	FUNC-PSC-CH-003
PCPS-SCC-004	2.1	No	FUNC-PSC-CH-004
PCPS-SCC-005	2.1	No	FUNC-PSC-CH-005
PCPS-SCC-006	2.1	Ed	FUNC-PSC-CH-006
PCPS-SCC-007	2.1	Ed	FUNC-PSC-CH-007
PCPS-SCC-008	2.1	No	FUNC-PSC-CH-008
PCPS-SCC-009	2.1	No	FUNC-PSC-CH-009
PCPS-SCC-010	2.1	No	FUNC-PSC-CH-010
PCPS-MBC-001	2.0	No	FUNC-MBC-GN-001
PCPS-MBC-002	2.0	No	FUNC-MBC-GN-002
PCPS-MBC-003	2.0	Ed	FUNC-MBC-GN-003
PCPS-MBC-004	2.0	No	FUNC-MBC-GN-004
PCPS-MBC-005	2.0	Ed	FUNC-MBC-GN-005
PCPS-PGM-001	2.0	No	FUNC-MBC-PG-001
PCPS-PGM-002	2.0	No	FUNC-MBC-PG-002
PCPS-PGM-003	2.0	No	FUNC-MBC-PG-003
PCPS-PGM-004	2.0	No	FUNC-MBC-PG-004
PCPS-PGM-005	2.0	No	FUNC-MBC-PG-005
PCPS-PGM-006	2.0	No	FUNC-MBC-PG-006
PCPS-ARA-001	2.0	No	FUNC-MBC-AR-001
PCPS-ARA-002	2.0	No	FUNC-MBC-AR-002
PCPS-ARA-003	2.0	Yes	n/a
PCPS-SRA-001	2.1	Ed	FUNC-MBC-ST-001
PCPS-SRA-002	2.1	Ed	FUNC-MBC-ST-002
PCPS-SRA-003	2.1	Ed	FUNC-MBC-ST-003
PCPS-EDM-001	2.1	No	FUNC-MBC-ED-001
PCPS-EDM-002	2.1	No	FUNC-MBC-ED-002
PCPS-EDM-003	2.1	No	FUNC-MBC-ED-005
PCPS-EDM-004	2.1	No	FUNC-MBC-ED-006
PCPS-MGS-001	2.1	No	FUNC-MBC-MG-001
PCPS-MGS-002	2.1	No	FUNC-MBC-MG-002
PCPS-MGS-003	2.1	Ed	FUNC-MBC-MG-003
PCPS-MGS-004	2.1	No	FUNC-MBC-MG-004
PCPS-MGS-005	2.1	Ed	FUNC-MBC-MG-005
PCPS-MGS-006	2.1	No	FUNC-MBC-MG-006

PCPS V1.0 Label	PoC Release Source	Req Mod	PoC Label
PCPS-MGS-007	2.1	No	FUNC-MBC-MG-007
PCPS-MUC-001	2.1	No	FUNC-MUC-001
PCPS-MUC-002	2.1	No	FUNC-MUC-002
PCPS-MUC-003	2.1	No	FUNC-MUC-003
PCPS-MUC-004	2.1	No	FUNC-MUC-004
PCPS-MUC-005	2.1	Ed	FUNC-MUC-005
PCPS-PER-001	2.0	Ed	FUNC-PEH-001
PCPS-PER-002	2.0	Ed	FUNC-PEH-002
PCPS-PER-003	1.0, 2.0	Yes	FUNC-PEH-006
PCPS-PER-004	1.0, 2.0	Yes	FUNC-PEH-005
PCPS-PER-005	1.0, 2.0	Yes	FUNC-PEH-007
PCPS-PER-006	1.0	Yes	n/a
PCPS-PER-007	1.0	Yes	n/a
PCPS-PER-008	1.0	Yes	n/a
PCPS-PER-009	1.0	Yes	n/a
PCPS-PER-010	2.0	Yes	FUNC-PEH-008
PCPS-PER-011	2.0	No	FUNC-PEH-009
PCPS-PER-012	1.0	Yes	n/a
PCPS-PER-013	1.0	Yes	n/a
PCPS-PER-014	1.0	Yes	n/a
PCPS-PER-015	2.0	No	FUNC-PEH-010
PCPS-PER-016	2.1	Ed	FUNC-PEH-011
PCPS-PER-017	2.0	Ed	FUNC-PEH-003
PCPS-PER-018	2.0	No	FUNC-PEH-004
PCPS-QOE-001	2.0	No	FUNC-QOE-GN-001
PCPS-QOE-002	2.0	No	FUNC-QOE-GN-002
PCPS-QOE-003	2.0	No	FUNC-QOE-GN-003
PCPS-QOE-004	2.0	Ed	FUNC-QOE-GN-004
PCPS-QOE-005	2.0	No	FUNC-QOE-GN-005
PCPS-QOE-006	2.0	No	FUNC-QOE-GN-006
PCPS-QOE-007	2.0	No	FUNC-QOE-GN-007
PCPS-QOE-008	2.0	No	FUNC-QOE-GN-008
PCPS-QOE-009	2.0	No	FUNC-QOE-GN-009
PCPS-QOE-010	2.0	No	FUNC-QOE-GN-010
PCPS-QOE-011	2.0	No	FUNC-QOE-GN-011
PCPS-QOE-012	2.0	No	FUNC-QOE-GN-012
PCPS-QPP-001	2.0	No	FUNC-QOE-PP-001
PCPS-QPP-002	2.0	No	FUNC-QOE-PP-002
PCPS-QPP-003	2.0	No	FUNC-QOE-PP-003

PCPS V1.0 Label	PoC Release Source	Req Mod	PoC Label
PCPS-QPP-004	2.0	No	FUNC-QOE-PP-004
PCPS-QPP-005	2.0	No	FUNC-QOE-PP-005
PCPS-QPP-006	2.0	No	FUNC-QOE-PP-006
PCPS-QPP-007	2.0	No	FUNC-QOE-PP-007
PCPS-QPP-008	2.0	No	FUNC-QOE-PP-008
PCPS-QPP-009	2.0	No	FUNC-QOE-PP-009
PCPS-QPP-010	2.0	Ed	FUNC-QOE-PP-010
PCPS-IWF-001	2.0	No	FUNC-IWF-GN-001
PCPS-IWF-002	2.0	No	FUNC-IWF-GN-002
PCPS-IWF-003	2.0	No	FUNC-IWF-GN-003
PCPS-IWF-004	2.0	No	FUNC-IWF-GN-004
PCPS-IWF-005	2.0	Ed	FUNC-IWF-GN-005
PCPS-IWF-006	2.0	Ed	FUNC-IWF-GN-006
PCPS-IWF-007	2.0	No	FUNC-IWF-GN-007
PCPS-IEN-001	2.0	No	FUNC-IWF-EN-001
PCPS-IEN-002	2.0	No	FUNC-IWF-EN-002
PCPS-IEN-003	2.0	No	FUNC-IWF-EN-003
PCPS-IEN-004	2.0	No	FUNC-IWF-EN-004
PCPS-IRA-001	2.0	No	FUNC-IWF-RA-001
PCPS-IRA-002	2.0	No	FUNC-IWF-RA-002
PCPS-IRA-003	2.0	Ed	FUNC-IWF-RA-003
PCPS-IRA-004	2.0	Ed	FUNC-IWF-RA-004
PCPS-IRA-005	2.0	Ed	FUNC-IWF-RA-005
PCPS-PBO-001	2.0	No	FUNC-PBO-001
PCPS-PBO-002	2.0	No	FUNC-PBO-001
PCPS-PBO-003	2.0	No	FUNC-PBO-001
PCPS-PBO-004	2.0	No	FUNC-PBO-001
PCPS-PBO-005	2.0	No	FUNC-PBO-001
PCPS-PBO-006	2.0	Ed	FUNC-PBO-001
PCPS-PBO-007	2.0	No	FUNC-PBO-010
PCPS-PBO-008	2.0	No	FUNC-PBO-011
PCPS-PBO-009	2.0	No	FUNC-PBO-012
PCPS-PBO-010	2.0	No	FUNC-PBO-013
PCPS-PBO-011	2.0	Ed	FUNC-PBO-016
PCPS-PBO-012	2.0	No	FUNC-PBO-020
PCPS-PBO-013	2.0	No	FUNC-PBO-021
PCPS-PBO-014	2.0	No	FUNC-PBO-024
PCPS-PBO-015	2.0	No	FUNC-PBO-026
PCPS-PBC-001	2.1	No	FUNC-STO-CPM-001

PCPS V1.0 Label	PoC Release Source	Req Mod	PoC Label
PCPS-PBC-002	2.1	No	FUNC-STO-CPM-002
PCPS-PBC-003	2.1	No	FUNC-STO-CPM-003
PCPS-PBC-004	2.1	No	FUNC-STO-CPM-004
PCPS-DPF-001	2.0	Yes	FUNC-DPF-001
PCPS-DPF-002	2.0	No	FUNC-DPF-002
PCPS-DPF-003	2.0	No	FUNC-DPF-003
PCPS-DPF-004	2.0	No	FUNC-DPF-004
PCPS-DPF-005	2.0	No	FUNC-DPF-005
PCPS-DPF-006	2.0	No	FUNC-DPF-006
PCPS-DPF-007	2.0	No	FUNC-DPF-007
PCPS-DPF-008	2.0	No	FUNC-DPF-008
PCPS-DPF-009	2.0	No	FUNC-DPF-009
PCPS-DPF-010	2.0	No	FUNC-DPF-010
PCPS-DPF-011	2.0	Ed	FUNC-DPF-011
PCPS-DPF-012	2.0	No	FUNC-DPF-012
PCPS-DPF-013	2.0	No	FUNC-DPF-013
PCPS-DPF-014	2.0	Yes	FUNC-DPF-014
PCPS-OSW-001	2.0	No	FUNC-ADD-WH-001
PCPS-OSW-002	2.0	No	FUNC-ADD-WH-002
PCPS-OSW-003	2.0	No	FUNC-ADD-WH-003
PCPS-OSW-004	2.0	No	FUNC-ADD-WH-004
PCPS-OSW-005	2.0	No	FUNC-ADD-WH-005
PCPS-OSW-006	2.0	No	FUNC-ADD-WH-006
PCPS-BBC-001	2.0	No	FUNC-ADD-CI-001
PCPS-BBC-002	2.0	No	FUNC-ADD-CI-002
PCPS-BBC-003	2.0	No	FUNC-ADD-CI-003
PCPS-BBC-004	2.0	No	FUNC-ADD-CI-005
PCPS-BBC-005	2.0	No	FUNC-ADD-CI-006
PCPS-EMR-001	2.1	No	FUNC-ADD-EXR-001
PCPS-EMR-002	2.1	No	FUNC-ADD-EXR-002
PCPS-EMR-003	2.1	No	FUNC-ADD-EXR-003
PCPS-EMR-004	2.1	No	FUNC-ADD-EXR-004a
PCPS-EMR-005	2.1	Ed	FUNC-ADD-EXR-005
PCPS-EMR-006	2.1	No	FUNC-ADD-EXR-007
PCPS-SSG-001	2.1	No	FUNC-SOG-001
PCPS-SSG-002	2.1	No	FUNC-SOG-002
PCPS-SSG-003	2.1	No	FUNC-SOG-003
PCPS-SSG-004	2.1	No	FUNC-SOG-004
PCPS-LAW-001	2.0	Ed	FUNC-ADD-LI-001

PCPS V1.0 Label	PoC Release Source	Req Mod	PoC Label
PCPS-LAW-002	2.0	No	FUNC-ADD-LI-002
PCPS-LAW-003	2.0	No	FUNC-ADD-LI-003
PCPS-LAW-004	2.0	No	FUNC-ADD-LI-004
PCPS-LAW-005	2.0	Ed	FUNC-ADD-LI-005
PCPS-OPR-001	1.0	Ed	n/a
PCPS-OPR-002	1.0	Ed	n/a
PCPS-OPR-003	1.0	No	n/a
PCPS-OPR-004	1.0	Ed	n/a
PCPS-OPR-005	1.0	Yes	n/a
PCPS-OPR-006	1.0	Ed	n/a
PCPS-OPR-007	1.0	Ed	n/a
PCPS-OPR-008	1.0	Ed	n/a
PCPS-OPR-009	1.0	Ed	n/a
PCPS-OPR-010	1.0	Ed	n/a
PCPS-OPR-011	1.0	Ed	n/a
PCPS-OPR-012	1.0	Ed	n/a
PCPS-OPI-001	1.0	Yes	n/a
PCPS-OPI-002	1.0	Yes	n/a
PCPS-OPI-003	1.0	Yes	n/a
PCPS-OPI-004	1.0	Yes	n/a
PCPS-OPI-005	1.0	Yes	n/a
PCPS-OPI-006	1.0	Yes	n/a
PCPS-OPI-007	1.0	Ed	n/a
PCPS-OPI-008	1.0	No	n/a
PCPS-OPI-009	1.0	Ed	n/a
PCPS-OPC-001	1.0	Yes	n/a
PCPS-OPC-002	1.0	No	n/a
PCPS-OPC-003	1.0	No	n/a
PCPS-OPC-004	1.0	Ed	n/a
PCPS-OIB-001	1.0	Yes	n/a
PCPS-OIB-002	1.0	Yes	n/a
PCPS-OAB-001	1.0	Yes	n/a
PCPS-OAB-002	1.0	Yes	n/a
PCPS-ODB-001	1.0	Yes	n/a
PCPS-OSM-001	1.0	Yes	n/a
PCPS-OSM-002	1.0	Yes	n/a
PCPS-PRS-001	1.0	Yes	n/a
PCPS-PRS-002	1.0	Yes	n/a
PCPS-PRS-003	1.0	Yes	n/a

PCPS V1.0 Label	PoC Release Source	Req Mod	PoC Label
PCPS-PRS-004	1.0	Ed	n/a
PCPS-PRS-005	1.0	Yes	n/a
PCPS-PRS-006	1.0	Yes	n/a
PCPS-PRS-007	1.0	Yes	n/a
PCPS-PRS-008	1.0	Yes	n/a
PCPS-PRS-009	1.0	Yes	n/a
PCPS-PRS-010	1.0	Yes	n/a
PCPS-PRS-011	1.0	No	n/a
PCPS-PRS-012	1.0	Ed	n/a
PCPS-PRS-013	1.0	Ed	n/a
PCPS-MGO-001	1.0	Ed	n/a
PCPS-MGO-002	1.0	Ed	n/a
PCPS-MGO-003	1.0	Yes	n/a
PCPS-MGO-004	1.0	Yes	n/a
PCPS-MGO-005	1.0	Ed	n/a
PCPS-MGO-006	1.0	Ed	n/a
PCPS-MGO-007	1.0	Yes	n/a
PCPS-MGO-008	1.0	Yes	n/a
PCPS-MGO-009	1.0	Yes	n/a
PCPS-MGO-010	1.0	Yes	n/a
PCPS-MGO-011	1.0	Yes	n/a
PCPS-MGO-012	1.0	Yes	n/a
PCPS-MGO-013	1.0	Yes	n/a
PCPS-MGO-014	1.0	Yes	n/a
PCPS-MGO-015	1.0	Yes	n/a
PCPS-MGO-016	1.0	Yes	n/a
PCPS-MGO-017	1.0	No	n/a
PCPS-MGO-018	1.0	No	n/a
PCPS-SMG-001	2.0	No	FUNC-MPG-001
PCPS-SMG-002	2.0	No	FUNC-MPG-002
PCPS-SMG-003	2.0	No	FUNC-MPG-003
PCPS-SMG-004	2.0	No	FUNC-MPG-004
PCPS-SMG-005	2.0	No	FUNC-MPG-005
PCPS-SMG-006	2.0	No	FUNC-MPG-006
PCPS-SMG-007	2.0	No	FUNC-MPG-009
PCPS-XDM-001	2.0	No	FUNC-XDM-MG-001
PCPS-PRV-001	1.0	Ed	n/a
PCPS-PRV-002	1.0	Ed	n/a
PCPS-PRV-003	1.0	Yes	n/a

PCPS V1.0 Label	PoC Release Source	Req Mod	PoC Label
PCPS-PRV-004	1.0	Yes	n/a
PCPS-PRV-005	1.0	No	n/a
PCPS-LEG-001	1.0	Yes	n/a
PCPS-ENT-001	1.0	Ed	n/a
PCPS-ENT-002	1.0	Yes	n/a
PCPS-DUR-001	1.0	Ed	n/a
PCPS-DUR-002	1.0	Ed	n/a
PCPS-DUR-003	1.0	Ed	n/a
PCPS-MAO-001	1.0	Ed	n/a
PCPS-MAO-002	1.0	Ed	n/a
PCPS-MAO-003	1.0	Yes	n/a
PCPS-MAO-004	1.0	Yes	n/a
PCPS-MAO-005	1.0	Yes	n/a
PCPS-MAO-006	1.0	Ed	n/a
PCPS-MAO-007	1.0	Yes	n/a
PCPS-MAO-008	1.0	Yes	n/a
PCPS-MAO-009	1.0	Yes	n/a
PCPS-MAO-010	1.0	Yes	n/a
PCPS-SPV-001	1.0	Yes	n/a
PCPS-SPV-002	1.0	Yes	n/a
PCPS-SPV-003	1.0	Yes	n/a
PCPS-SPV-004	1.0	Yes	n/a
PCPS-INT-001	n/a	Yes	n/a
PCPS-INT-002	n/a	Yes	n/a
PCPS-INT-003	n/a	Yes	n/a
PCPS-INT-004	n/a	Yes	n/a
PCPS-INT-005	n/a	Yes	n/a
PCPS-INT-006	n/a	Yes	n/a
PCPS-SOP-001	1.0	Ed	n/a
PCPS-SOP-002	1.0	Ed	n/a
PCPS-SOP-003	1.0	Yes	n/a
PCPS-SOP-004	1.0	Yes	n/a
PCPS-SOP-005	1.0	Yes	n/a
PCPS-SOP-006	1.0	Ed	n/a
PCPS-SOP-007	1.0	Ed	n/a
PCPS-SOP-008	1.0	Ed	n/a
PCPS-SOP-009	1.0	Yes	n/a
PCPS-SOP-010	1.0	No	n/a
PCPS-SOP-011	1.0	Ed	n/a

PCPS V1.0 Label	PoC Release Source	Req Mod	PoC Label
PCPS-SOP-012	1.0	Ed	n/a
PCPS-SEL-001	1.0	Ed	n/a
PCPS-SEL-002	1.0	Ed	n/a
PCPS-SEL-003	1.0	Ed	n/a
PCPS-SEL-004	1.0	Ed	n/a
PCPS-SEL-005	1.0	Ed	n/a
PCPS-SEL-006	1.0	Ed	n/a
PCPS-SEL-007	1.0	Ed	n/a
PCPS-SEL-008	1.0	Yes	n/a
PCPS-SEL-009	1.0	Ed	n/a
PCPS-SEL-010	1.0	Ed	n/a
PCPS-SEL-011	1.0	Ed	n/a
PCPS-SEL-012	1.0	Ed	n/a
PCPS-SEL-013	1.0	Yes	n/a
PCPS-SEL-014	1.0	Ed	n/a
PCPS-SEL-015	1.0	Ed	n/a
PCPS-SEL-016	1.0	Ed	n/a
PCPS-SEL-017	1.0	Ed	n/a
PCPS-SEL-018	1.0	Ed	n/a
PCPS-SEL-019	1.0	Ed	n/a
PCPS-SEL-020	1.0	Ed	n/a
PCPS-SEL-021	1.0	Ed	n/a
PCPS-SEL-022	1.0	Ed	n/a
PCPS-SEL-023	1.0	Ed	n/a
PCPS-SEL-024	1.0	Ed	n/a
PCPS-SEL-025	1.0	Ed	n/a
PCPS-SEL-026	1.0	Ed	n/a
PCPS-SEL-027	1.0	Yes	n/a
PCPS-SEL-028	1.0	Ed	n/a
PCPS-SEL-029	1.0	Ed	n/a
PCPS-SEL-030	1.0	Yes	n/a
PCPS-SEL-031	1.0	Ed	n/a
PCPS-NET-001	1.0	Ed	n/a
PCPS-NET-002	1.0	Ed	n/a
PCPS-NET-003	1.0	Ed	n/a
PCPS-NET-004	1.0	Ed	n/a
PCPS-NET-005	1.0	Ed	n/a
PCPS-NET-006	1.0	Ed	n/a
PCPS-NET-007	1.0	Ed	n/a

PCPS V1.0 Label	PoC Release Source	Req Mod	PoC Label
PCPS-NET-008	1.0	Ed	n/a
PCPS-NET-009	1.0	Ed	n/a
PCPS-NTP-001	1.0	Ed	n/a
PCPS-NTP-002	1.0	Yes	n/a
PCPS-NTO-001	1.0	No	n/a
PCPS-NTD-001	1.0	No	n/a
PCPS-NTL-001	1.0	No	n/a
PCPS-NTG-001	1.0	Ed	n/a
PCPS-SEC-001	1.0	Yes	n/a
PCPS-SEC-002	1.0	Ed	n/a
PCPS-SEC-003	1.0	Ed	n/a
PCPS-SEC-004	1.0	Ed	n/a
PCPS-MSE-001	2.1	No	FUNC-SEC-MBS-001
PCPS-ISE-001	2.1	Ed	FUNC-SEC-IWF-001
PCPS-ISE-002	2.1	Ed	FUNC-SEC-IWF-002
PCPS-ISE-003	2.1	Ed	FUNC-SEC-IWF-003
PCPS-CHR-001	2.0	No	FUNC-CHG-GN-001
PCPS-CHR-002	2.0	No	FUNC-CHG-GN-002
PCPS-CHR-003	1.0	Ed	n/a
PCPS-CHR-004	2.0	Ed	FUNC-CHG-GN-002
PCPS-CHR-005	2.0	Ed	FUNC-CHG-GN-002
PCPS-CHR-006	2.0	Ed	FUNC-CHG-GN-002
PCPS-CHR-007	1.0	Ed	n/a
PCPS-CHR-008	2.0	Ed	FUNC-CHG-GN-002
PCPS-CHR-009	1.0	Ed	n/a
PCPS-CHR-010	1.0	Ed	n/a
PCPS-CHR-011	2.0	Ed	FUNC-CHG-GN-002
PCPS-CHR-012	1.0	Ed	n/a
PCPS-CHR-013	2.0	Ed	FUNC-CHG-GN-002
PCPS-CHR-014	2.0	Ed	FUNC-CHG-GN-002
PCPS-CHR-015	2.0	Ed	FUNC-CHG-GN-002
PCPS-CHR-016	2.0	Ed	FUNC-CHG-GN-002
PCPS-CHR-017	2.0	Ed	FUNC-CHG-GN-002
PCPS-CHR-018	2.0	Ed	FUNC-CHG-GN-002
PCPS-CHR-019	1.0	Ed	n/a
PCPS-CHR-020	2.0	Ed	FUNC-CHG-GN-002
PCPS-CHR-021	2.0	Ed	FUNC-CHG-GN-002
PCPS-CHR-022	1.0	Ed	n/a
PCPS-CHR-023	2.0	Ed	FUNC-CHG-GN-003

PCPS V1.0 Label	PoC Release Source	Req Mod	PoC Label
PCPS-CHR-024	2.0	Ed	FUNC-CHG-GN-004
PCPS-CHR-025	1.0	Ed	n/a
PCPS-CHR-026	2.1	Ed	FUNC-CHG-GN-005
PCPS-CHR-027	2.1	No	FUNC-USA-MC-007
PCPS-CHR-028	2.0	Ed	FUNC-EPE-MC-013
PCPS-CHR-029	2.0	No	FUNC-QOE-GN-010
PCPS-RCH-001	1.0	Yes	n/a
PCPS-RCH-002	1.0	Ed	n/a
PCPS-RCH-003	1.0	Yes	n/a
PCPS-RCH-004	1.0	Ed	n/a
PCPS-NDC-001	2.1	Ed	FUNC-CHG-NB-001
PCPS-NDC-002	2.1	Ed	FUNC-CHG-NB-002
PCPS-IWC-001	2.1	Ed	FUNC-CHG-IWF-001
PCPS-IWC-002	2.1	Ed	FUNC-CHG-IWF-002
PCPS-IWC-003	2.1	Ed	FUNC-CHG-IWF-003
PCPS-IWC-004	2.1	Ed	FUNC-CHG-IWF-004
PCPS-IWC-005	2.1	Yes	FUNC-CHG-IWF-005
PCPS-SYS-001	1.0	No	n/a
PCPS-SYS-002	1.0	Ed	n/a
PCPS-SYS-003	1.0	Yes	n/a
PCPS-SYS-004	1.0	Ed	n/a
PCPS-SYS-005	1.0	Ed	n/a
PCPS-SYS-006	1.0	Yes	n/a
PCPS-SYS-007	1.0	Yes	n/a
PCPS-SYS-008	1.0	Yes	n/a
PCPS-SYS-009	1.0	Yes	n/a
PCPS-SYS-010	1.0	Yes	n/a
PCPS-SYS-011	1.0	Yes	n/a

Table 79: PCPS V1.0 Requirements Source Information

F.2 Unrealized PoC Requirements (Informative)

F.2.1 Unrealized Requirements from PoC V1.0

The requirements in this section are for informational purpose only.

Note: There is no requirements label information available for PoC V1.0 requirements.

Label	Description	PoC Rel Source
High Level Functional requirements		
n/a	PoC Subscribers MAY join a PoC group and become members of the PoC group.	1.0

Session Setup Procedures - Pre-arranged Group PoC Session Setup		
n/a	The PoC Service Entity MAY check if at least one of the PoC Group Members is able to participate.	1.0
n/a	The PoC Service Entity MAY select a set of PoC Group Members based on a pre-determined criteria (e.g. based on their availability or presence information), and only invite this selected subset to participate in the PoC Session	1.0
Session Setup Procedures - Ad-hoc PoC Group Session set-up		
n/a	The inviting PoC User SHOULD receive notification of the result of the invitation as per the invited PoC User.	1.0
Administration and Configuration - Visibilities of PoC groups		
n/a	The PoC group SHALL be visible to the PoC Host. When a PoC User searches for available PoC groups, a PoC group MAY be found or not found according to the following pre-defined conditions: • The PoC group is visible to PoC Group Members only, or • The PoC group is visible to all PoC Users, or • PoC group is visible to the PoC Host only.	1.0
Administration and Configuration - PoC Session termination policies		
n/a	A PoC Host MAY be able to trigger the termination of the PoC Session as described below. • Termination of session by date or date/time	1.0
Administration and Configuration - PoC group and contact list management		
n/a	PoC Group List combinations (Optional): • Various PoC groups MAY be combined to create a new group. • A PoC Subscriber MAY have the capability to create and manage their own pre-arranged, ad-hoc or chat Group Lists, subject to Service Provider Policy and access rules. • A PoC Subscriber may use groups to which they belong, defined by themselves or other PoC Subscribers, to define new group combinations, subject to Service Provider Policy and access rules.	1.0
Administration and Configuration - Service Provisioning by Service provider		
n/a	Where device management is supported by the PoC Service Entity and the PoC User's terminal and client, it SHALL be possible for the PoC Service Provider to set up and update PoC communication feature configuration remotely in the terminal device. It SHOULD include: - Setting up of the PoC key(s) and any icons and indications required on the terminal device, as applicable.	1.0
Operational - High Level Requirements		
n/a	PoC User MAY download a list of Chat PoC Groups that he can join.	1.0
n/a	A PoC Host MAY grant, or reject, requests from PoC Subscribers to join the PoC group.	1.0
Operational - Duration of speaking		
n/a	In the case of Ad-hoc PoC Groups, the PoC Host MAY preset a maximum speaking duration.	1.0

Table 80: Unrealized Requirements from PoC V1.0

F.2.2 Unrealized Requirements from PoC V2.1

This is an informational section that contains the unrealized high level PoC requirements in the PCPS Service Enabler. The requirements in this section are for informational purpose only. The Labels used in this section are verbatim from the version shown in the right most column.

F.2.2.1 PoC Sessions with Multiple PoC Groups

Label	Description	PoC Rel Source
Functionality		
FUNC-MPG-007	The invited PoC Groups MAY have restrictions that prohibit the members to be invited to the PoC Session (the PoC Group has an attribute of "none" implying only the members of the PoC Group may belong to a given PoC Session). The invited PoC Groups MAY also have restrictions that prohibit additional PoC Users not originally invited to be added to a PoC Session. NOTE: The policy applied for the resulting PoC Session is the same policy that applies to an Ad-hoc PoC Group Session.	2.1
FUNC-MPG-008	The originating PoC User MAY be able to send a message that advertises the the PoC Group to multiple PoC Groups and/or individual PoC Users. The targeted PoC Groups MAY be able to reside on separate group management servers, each possibly owned by a different PoC Service Provider	2.1

Table 81: Unrealized requirements on PoC Sessions with Multiple Groups

F.2.2.2 Enhanced PoC Session Establishment

F.2.2.2.1 Incoming Media Barring

Label	Description	PoC Rel Source
Functionality		
FUNC-EPE-MB-006	The PoC Service Infrastructure SHALL use the Manual Answer Mode as the default Answer Mode for the PoC Sessions when video is the Media (the PoC User can configure the Answer Mode as he wishes).	2.1
FUNC-EPE-MB-007	The PoC Service Infrastructure SHALL use the Automatic Answer Mode as the default Answer Mode for the PoC Sessions with only messaging Media or when adding messaging to the on-going PoC Session.	2.1

Table 82: Unrealized requirements on Incoming Media Barring

F.2.2.3 Invitation Reservation

When a PoC User requests a PoC Server to reserve an invitation with its preferred PoC Service Settings the PoC Server automatically establishes a corresponding PoC Session on behalf of the PoC User's request.

Label	Description	PoC Rel Source
Conditionality		
FUNC-IRS-001	The PoC Service Infrastructure MAY support the invitation reservation functionality.	2.1
FUNC-IRS-002	The PoC Client MAY support initiation of the invitation reservation.	2.1
Functionality		
FUNC-IRS-003	In case of 1-1 PoC Session and Ad-hoc PoC Group Session, a PoC User SHALL be able to reserve an invitation.	2.1
FUNC-IRS-004	In case of Pre-arranged PoC Group Session, an authorised PoC Group Member, defined in the PoC Group data, SHALL be able to reserve an invitation.	2.1

FUNC-IRS-005	The PoC Client SHALL provide a means for a PoC User to place preferred PoC Service Settings such as invited PoC User presence information, PoC Session start-up time, reservation timeout value, and triggering parameters (e.g., when at least one invited PoC User becomes available).	2.1
FUNC-IRS-006	The PoC Client SHALL request PoC Server to reserve the PoC Client's invitation according to the preferred PoC Service Settings. NOTE 1: The preferred PoC Service Settings can be placed by an external interworking machine (e.g., a PC). NOTE 2: To reserve an invitation can be requested by an external interworking machine.	2.1
FUNC-IRS-007	The PoC Server SHALL collect information on both inviting PoC User's and invited PoC User's availability from corresponding PoC Server and Presence Server, if Presence is supported.	2.1
FUNC-IRS-008	The PoC Server SHALL send an invitation to the inviting PoC User and all the invited PoC Users, if the preferred PoC Service Settings are satisfied.	2.1
FUNC-IRS-009	The PoC Server SHALL initiate 1-1 PoC Session or PoC Group Session according to the PoC Service Settings requested by the authorized PoC User.	2.1
FUNC-IRS-010	The PoC Server SHALL follow transparent procedures as the normal PoC Session establishment initiated by a PoC Client.	2.1
FUNC-IRS-011	The PoC Server SHALL invite missing PoC Users through invitation reservation, when they become available, until the ongoing PoC Session is released.	2.1
FUNC-IRS-012	The PoC Server MAY notify the inviting PoC User if the feature is not allowed to use for any reason.	2.1
FUNC-IRS-013	PoC User SHALL be able to modify or cancel the made invitation reservation, if conditions are not met yet.	2.1
FUNC-IRS-014	The PoC User SHALL be able to set required participants when PoC User request reservation of a PoC Group Session.	2.1
FUNC-IRS-015	The PoC infrastructure SHALL begin the PoC Group Session after all required participants meet the rules of Invitation Reservation.	2.1
FUNC-IRS-016	The required PoC User SHALL be able to receive the indication that they are required participants during PoC Session establishment.	2.1

Table 83: Unrealized PoC Requirements on Invitation Reservation

F.2.2.4 PoC Box

Label	Description	PoC Rel Source
FUNC-PBO-004a	The PoC Service SHALL have the means to route incoming 1-many PoC Session invitations on behalf of a PoC User to his PoC Box based on various criteria such as the PoC User is unavailable. The PoC Box SHALL have the means to accept incoming 1-many PoC Session invitations on behalf of a PoC User.	2.1
FUNC-PBO-007	A PoC User SHALL have the means to start recording of PoC Session Data and PoC Session Control Data during an ongoing PoC Session (e.g., for re-play of stored data) by the PoC Box functionality using PoC Client capabilities. NOTE 2: The Inviting PoC User is able to configure which PoC Box (a PoC Network based or PoC Client based PoC Box) to be used when both are available.	2.1

FUNC-PBO-008	A PoC User while in a PoC Session MAY have the means to request the floor on behalf of his PoC Box and replay for the audience stored PoC Session Data using PoC Client capabilities.	2.1
FUNC-PBO-009	A PoC User MAY have the means to request the PoC Box functionality in case the PoC User is participating in Simultaneous PoC Sessions.	2.1
FUNC-PBO-014	A PoC User MAY have the means to request that the on-going PoC Session is routed to the PoC Box when he leaves that PoC Session.	2.1
FUNC-PBO-015	A PoC User MAY have the means to request that he/she joins the on-going PoC Session in which the PoC Box is participating on behalf of the PoC User by his/her request	2.1
FUNC-PBO-016a	PoC Users in a PoC Session SHALL be notified of the existence of the PoC Box, when the PoC Box is entering the PoC Session.	2.1
FUNC-PBO-017	The PoC Service Infrastructure SHOULD according to regulatory conditions expel the PoC Box from the PoC Session, when PoC Client(s) without PoC Box functionality (incl. PoC V1.0 Clients) joins to the PoC Session and indication of the PoC Box can't be given.	2.1
FUNC-PBO-018	The PoC Service Infrastructure SHOULD according to regulatory conditions prevent joining the PoC Box to the on-going PoC Session, when PoC Client(s) without PoC Box functionality (incl. PoC V1.0 Clients) are participating in the PoC Session, and an indication of the PoC Box can't be given.	2.1
FUNC-PBO-019	An authorized PoC User SHALL be able to deny access or expel a PoC Box from a PoC Session using PoC Client capabilities.	2.1
FUNC-PBO-022	Participants in a PoC Session MAY define a lifetime of their messages left on a PoC Box.	2.1
FUNC-PBO-023	Messages for which a lifetime has been indicated by the message issuer SHALL be deleted from a PoC Box if the message's lifetime has expired.	2.1
FUNC-PBO-025	If the PoC Box functionality is supported then when the stored PoC Media Burst is replayed the PoC Address of the inviting PoC User SHALL be displayed unless the inviting PoC User has requested privacy.	2.1
FUNC-PBO-027	The PoC Service Infrastructure SHALL support providing information about used storage which is based on subscription of the PoC Box collocated in PoC Service Infrastructure as subscription based charging information to charging functions.	2.1

Table 84: Unrealized PoC Requirements on PoC Box

F.2.2.5 Enhanced PoC Session Control

F.2.2.5.1 PoC Session Transfer

PoC Session can be transferred to another PoC Client or to another SIP based client.

Label	Description	PoC Rel Source
Conditionality		
FUNC-PSC-ST-001	The PoC Service Infrastructure MAY support PoC Session transfer functionality.	2.1
FUNC-PSC-ST-002	The PoC Client MAY support PoC Session transfer functionality.	2.1
Functionality		
FUNC-PSC-ST-003	The PoC User MAY be able to transfer his/her participating PoC Session from his/her PoC Client to other of his PoC Client, using the same PoC Address.	2.1
FUNC-PSC-ST-004	The PoC Client MAY be able to request that the PoC Service in the Home PoC Network authorises the requested PoC Session Seamless Transfer	2.1

FUNC-PSC-ST-005	The PoC Service MAY be able to connect the transfer target PoC Client to the on-going PoC Session, and release the previous PoC Client without noticeable service interruption, upon the request of PoC Client. NOTE 1: The PoC Session transfer function is not applicable during message transfer.	2.1
FUNC-PSC-ST-006	The PoC User MAY be able to transfer his participating PoC Session between his PoC Client and another SIP-based client. NOTE 2: We need a definition for SIP based client. We have to study if we want to expand this functionality to any client.	2.1

Table 85: Unrealized PoC Requirements on PoC Session Transfer

F.2.2.5.2 Checking for Condition Based Session Barring

Condition Based PoC Session barring conditions may be checked during a time period defined by the PoC User that defined the Condition Based PoC Session barring conditions. During the time period invitations are carried out as soon as the invitations are no longer barred.

Label	Description	PoC Rel Source
Conditionality		
FUNC-PSC-CB-001	The PoC Service Infrastructure MAY support checking for Condition Based Session Barring functionality.	2.1
Functionality		
FUNC-PSC-CB-002	The PoC Client MAY support that a PoC User defining Condition Based PoC Session Barring conditions for incoming PoC Session invitations defines a time period for checking the conditions.	2.1
FUNC-PSC-CB-003	The PoC Client MAY support that a PoC User defining Condition Based PoC Session Barring conditions for outgoing PoC Session invitations defines a time period for checking the conditions.	2.1
FUNC-PSC-CB-004	If the PoC Service Infrastructure supports Condition Based PoC Session Barring it MAY be able to carry out the incoming PoC Session invitation as soon as the conditions are in favor of the invitation during a time period defined by the inviting PoC User.	2.1
FUNC-PSC-CB-005	If the PoC Service Infrastructure supports Condition Based PoC Session Barring it MAY be able to carry out the outgoing PoC Session invitation as soon as the conditions are in favor of the invitation during a time period defined by the inviting PoC User.	2.1

Table 86: Unrealized PoC Requirements on Checking for Condition Based Session Barring

F.2.2.5.3 Enhanced Simultaneous PoC Sessions

The Enhanced Simultaneous PoC Sessions feature enables PoC Client to receive/transmit Media in different PoC Sessions without interference with one another. With the optional feature of Simultaneous PoC Sessions in PoC V1.0, the PoC Server filters the voice from different PoC Sessions and delivers only one voice stream from one PoC Session to a PoC User at a time. With this feature, the Media other than voice is not necessarily filtered, but Media in different PoC Sessions can be transferred at the same time. Enhanced Simultaneous PoC Sessions is an optional functionality for PoC Server and PoC Client. If supported, the following requirements apply.

Label	Description	PoC Rel Source
Conditionality		
FUNC-PSC-MA-001	The PoC Service Infrastructure MAY support the Enhanced Simultaneous PoC Sessions functionality.	2.1
FUNC-PSC-MA-002	The PoC Client MAY support the Enhanced Simultaneous PoC Sessions functionality.	2.1
Functionality		

FUNC-PSC-MA-004	The PoC Server SHALL be able to activate Enhanced Simultaneous PoC Sessions on receipt of the PoC Session setup request or during the PoC Session.	2.1
FUNC-PSC-MA-005	The PoC Client MAY support receiving more than one Media at the same time belonging to either the same or different PoC Session according to the negotiation with PoC Server.	2.1
FUNC-PSC-MA-006	The PoC Client and the PoC Server SHALL support sending more than one Media Type at a time in either the same or different PoC Sessions.	2.1
FUNC-PSC-MA-007	The PoC Client and the PoC Server SHALL be able to support switching from one Media Type to another Media Type within a PoC Session. NOTE 1: The decision of the switching from one Media Type to another Media Type depends on local policy (e.g., only the PoC Session initiator can have the right to do the switching).	2.1
FUNC-PSC-MA-008	The PoC Client SHALL support switching between Media Bursts either within one PoC Session or between PoC Sessions in case more than one Media Burst is offered by the PoC Server, if requested by PoC User.	2.1
FUNC-PSC-MA-010	The PoC Server MAY support the Simultaneous PoC Sessions Media filtering for video in a similar way as specified in PoC V1.0 for voice.	2.1
FUNC-PSC-MA-010a	The PoC Server MAY support the Simultaneous PoC Sessions Media filtering for images in a similar way as specified in PoC V1.0 for voice.	2.1

Table 87: Unrealized PoC Requirements on Enhanced Simultaneous PoC Sessions

F.2.2.5.4 Man-machine PoC Session Release Policies

Man-machine PoC Session is a PoC Session in which machine PoC User(s) is (are) participating. This kind of PoC Session can have different release rules.

Label	Description	PoC Rel Source
Conditionality		
FUNC-PSC-MM-001	The PoC Service Infrastructure SHALL support the Man-machine PoC Session release policies feature.	2.1
Functionality		
FUNC-PSC-MM-002	The PoC Server SHALL be able to check the attribute of Participant in a Man-machine PoC Session. NOTE 1: "Attribute" needs clarification.	2.1
FUNC-PSC-MM-003	The PoC Service Provider SHALL be able to ensure that the PoC Session can be released if only machine Participant(s) stay in one PoC Session. NOTE 2: This requirement is covered in the next one and this requirement can be removed.	2.1
FUNC-PSC-MM-004	In addition to what is specified in PoC V1.0 the PoC Session release policies and in the PoC Group Specific Releasing Rules, PoC Service Provider SHALL be able to release a Man-machine PoC Session due to one or more reasons in the following list: Release PoC Session when the second last human Participant leaves the PoC Session; Release PoC Session when the last human Participant leaves the PoC Session;	2.1

Table 88: Unrealized PoC Requirements on Man-Machine PoC Session Release Policies

F.2.2.5.5 PoC Session Control for Crisis Handling

Label	Description	PoC Rel Source
Functionality		
FUNC-PSC-CH-011	The PoC Service Infrastructures SHALL be able to identify the URI of Crisis Event Handling Entity.	2.1

Table 89: Unrealized PoC Requirements on PoC Session Control for Crisis Handling

F.2.2.5.6 Splitting and Merging PoC Sessions

The PoC Service optionally supports splitting and merging of PoC Sessions.

Label	Description	PoC Rel Source
Conditionality		
FUNC-PSC-SM-001	The PoC Service Infrastructure MAY support the splitting and merging PoC Session feature.	2.1
FUNC-PSC-SM-002	The PoC Client MAY support the splitting and merging PoC Session feature.	2.1
Functionality		
FUNC-PSC-SM-003	A Participant or PoC Session Owner MAY be able to combine on-going multiple PoC Sessions with another on-going or starting a 1-1, Pre-arranged or Ad hoc Group PoC Session into one PoC Group Session if authorized to do so and permitted by the PoC Group specific policy. NOTE 1: This is not Pre-arranged or Chat PoC Group Session, but is this Ad-hoc PoC Group Session or something else? Definition for this kind of PoC Session is needed. NOTE 2: A PoC User not involved in a PoC Session may initiate the combining of the PoC Session with another PoC Session, if the PoC User is authorized to do so.	2.1
FUNC-PSC-SM-004	A PoC Participant or PoC Session Owner MAY be able to combine on-going multiple Chat PoC Group Sessions with on-going Chat PoC Group Session into one Chat PoC Group Session if authorized to do so and permitted by the PoC Group specific policy and Access Control. NOTE 3: Handling of different PoC Group policies when combining PoC Sessions is FFS. NOTE 4: Further elaboration is needed on PoC Group policy will be used for the maximum Participants and error handling when maximum Participant's condition is reached.	2.1
FUNC-PSC-SM-005	If splitting and merging is supported, a priority mechanism SHALL be applied to grant the sender arbitration during the merging process.	2.1
FUNC-PSC-SM-006	Splitting is only applicable to a Hierarchical PoC Groups. When splitting an ongoing hierarchical Pre-arranged Group PoC Session, a Participant or a PoC Session Owner MAY be able to split the PoC Session into two or more pre-defined PoC Groups, if he is authorized to do so and the release rules allow for it.	2.1
FUNC-PSC-SM-007	If splitting and merging is supported, the PoC Service SHALL support static Hierarchical PoC Groups. NOTE 5: Applicability to multiple domains is FFS.	2.1

Table 90: Unrealized PoC Requirements on Splitting and Merging PoC Sessions

F.2.2.5.7 PoC Session Substitution

In PoC V1.0, the number of Simultaneous PoC Sessions is limited. If the PoC Client has the maximum number of PoC Sessions and a new incoming invitation arrives at the PoC Server, the PoC Server sends the reject message 'busy'. PoC Session substitution can provide flexibility for the PoC User to accept the incoming invitation by replacing an existing PoC Session according to preference of the PoC User.

Label	Description	PoC Rel Source
Conditionality		
FUNC-PSC-SU-001	The PoC Service Infrastructure MAY support the PoC Session substitution functionality.	2.1
FUNC-PSC-SU-002	The PoC Client MAY support PoC Session substitution functionality.	2.1
Functionality		
FUNC-PSC-SU-003	The PoC Service Infrastructure MAY support the preferred PoC Service Settings in the PoC Server by the PoC User. The Preferred PoC Service Settings are as follows • Rejecting new incoming invitation automatically by PoC Server. • Routing to the invited PoC Client directly by PoC Server (default setting). • Routing to the PoC Box directly by PoC Server.	2.1
FUNC-PSC-SU-004	The PoC Client MAY allow the PoC User to substitute an incoming invitation in place of the existing PoC Session according to choice of PoC User.	2.1

Table 91: Unrealized PoC Requirements on PoC Session Substitution

F.2.2.6 Dispatcher Functions

Label	Description	PoC Rel Source
Functionality		
FUNC-DPF-005	The PoC Dispatcher SHALL be able to transmit Media Bursts to an individual PoC Fleet Member in an ongoing 1-many-1 PoC Session separately.	2.1
FUNC-DPF-010	The PoC Dispatcher SHALL be able to manage the permission of individual PoC Fleet Members to establish 1-1 and Ad hoc PoC Group Sessions among individual PoC Fleet Members.	2.1
FUNC-DPF-014	The PoC Dispatcher MAY be able to manage the permission of individual PoC Fleet Members to establish PoC Sessions to PoC Users outside their Pre-arranged Group supporting 1-many-1 PoC Sessions.	2.1
FUNC-DPF-017	Subject to authorisation, a PoC Fleet Member MAY be able to communicate in a 1-1 or Ad hoc PoC Group Session with other PoC Fleet Members when not already participating in an ongoing 1-many-1 PoC Session.	2.1

Table 92: Unrealized PoC Requirements on Dispatcher Functions

F.2.2.7 Media Burst Control Enhancements

F.2.2.7.1 Queue Reset

When an optional queuing of Media Burst queuing is supported the PoC Service can optionally support queue reset.

NOTE: The user experience related to the interaction of optional features requiring the authorization of the PoC Client needs to be examined.

Label	Description	PoC Rel Source
Conditionality		
FUNC-MBC-QR-001	The PoC Service Infrastructure MAY support the queue reset feature.	2.1
FUNC-MBC-QR-002	The PoC Client MAY support the queue reset feature.	2.1
Functionality		
FUNC-MBC-QR-003	The authorized PoC User SHALL be able to request a queue reset.	2.1
FUNC-MBC-QR-004	The authorization rights for queue reset SHOULD be configurable.	2.1
FUNC-MBC-QR-005	The PoC Server SHALL be able to clear all reserved Talk Burst requests in a queue, when requested. NOTE: It is FFS if it is Media Burst or Talk Burst queuing. Applicable also to bullet 5.	2.1
FUNC-MBC-QR-006	If queue reset is requested but cannot be completed (e.g., the PoC User is not authorised), then the requesting Participant SHALL be notified accordingly. The reason for failure MAY also be provided.	2.1
FUNC-MBC-QR-007	The PoC Server SHALL provide the capability to indicate to those Participants whose Talk Burst Request has been queued, that all Talk Burst requests in the queue have been reset after a queue reset request was successfully handled.	2.1

Table 93: Unrealized PoC Requirements on Queue Reset

F.2.2.7.2 Media Burst Reject Option

In some error cases it is useful to be able to stop PoC Server to transmit the on-going Media Burst.

Label	Description	PoC Rel Source
Conditionality		
FUNC-MBC-BR-001	The PoC Service Infrastructure MAY support the Media Burst Control reject option feature.	2.1
FUNC-MBC-BR-002	The PoC Client MAY support the Media Burst reject option feature.	2.1
Functionality		
FUNC-MBC-BR-003	A PoC Client MAY be able to reject an incoming Media Burst any time in a way, that the PoC Client is still able to receive subsequent Media Bursts in the same PoC Session.	2.1
FUNC-MBC-BR-004	If the Media Burst reject functionality is supported by the PoC Server, the PoC Server SHALL stop sending the on-going Media Burst to the rejecting PoC Client.	2.1

Table 94: Unrealized PoC Requirements on Media Burst Reject Option

F.2.2.7.3 Limiting the Permission to Request the Media Bursts

In some situations a PoC Service Provider chooses to limit the permission to request the Media Burst, and in such cases the following apply:

Label	Description	PoC Rel Source
Conditionality		
FUNC-MBC-LP-001	The PoC Service Infrastructure MAY support the limiting the permission to request the Media Bursts feature.	2.1

FUNC-MBC-LP-002	The PoC Client MAY support the limiting the permission to request the Media Burst feature. NOTE: It is FFS, if this functionality is optional or mandatory for the PoC Client.	2.1
Functionality		
FUNC-MBC-LP-003	PoC Server MAY indicate the PoC Client the Media Burst Request Permission Level(s), which are allowed to attempt Media Burst Request.	2.1
FUNC-MBC-LP-004	The Media Burst Request Permission Levels, if used, MAY be provisonable by the PoC ServiceProvider.	2.1
FUNC-MBC-LP-005	PoC Client SHALL NOT attempt to send Media Burst request in case Media Burst request is allowed only for other Media Burst Request Permission Level(s) than the PoC Client belongs to.	2.1

Table 95: Unrealized PoC Requirements on Limiting the Permission to Request the Media Bursts

F.2.2.7.4 Advanced Revocation Alert

Label	Description	PoC Rel Source
Functionality		
FUNC-MBC-AR-003	The setting of the advanced revocation alert MAY be configurable by the PoC User.	2.1

Table 96: Unrealized PoC Requirements on Advanced Revocation Alert

F.2.2.7.5 Remaining Transmit Time Notification for Advanced Revocation Alert

The feature for the PoC Server to send to the PoC Client a notification of remaining transmit time, called as “Remaining transmit time Notification”, is needed for the PoC Client to be able to generate an accurate advanced alert for the PoC User to inform revocation of granted floor to occur.

Label	Description	PoC Rel Source
Conditionality		
FUNC-MBC-TN-001	The PoC Service Infrastructure SHOULD support the remaining transmit time notification for advanced revocation alert functionality.	2.1
FUNC-MBC-TN-002	The PoC Client MAY support the remaining transmit time notification for advanced revocation alert functionality.	2.1
Functionality		
FUNC-MBC-TN-003	If Remaining Transmit Time Notification for Advanced Revocation Alert is supported by the PoC Service Infrastructure, the PoC Server SHALL be able to send a notification of the remaining transmit time to the transmitting PoC Client before transmission.	2.1
FUNC-MBC-TN-004	If Remaining Transmit Time Notification for Advanced Revocation Alert is supported by the PoC Service Infrastructure, the PoC Server SHALL be able to send a notification of the remaining transmit time to the transmitting PoC Client during transmission.	2.1
FUNC-MBC-TN-005	The PoC Client SHOULD be able to give an alert for the PoC User to indicate the remaining transmit time.	2.1

Table 97: Unrealized PoC Requirements on Remaining Time for Advance Revocation Alert

F.2.2.7.6 Stop Transmit Time Notification for Advanced Revocation Alert

Label	Description	PoC Rel Source
Functionality		

FUNC-MBC-ST-004	The PoC Service Infrastructure SHOULD support the transmit time notification for advanced revocation alert functionality in the case the time for transmitting Media is changed by the PoC Service Infrastructure.	2.1

Table 98: Unrealized PoC Requirements on Stop Transmit Time for Advanced Revocation Alert

F.2.2.7.7 Expanding Duration of Media Burst Transmitting

Label	Description	PoC Rel Source
Functionality		
FUNC-MBC-ED-003	In case that there is no Media Burst requests in the queue, the PoC Server MAY expand duration of Media Burst transmitting. If the expanding duration of Media Burst transmitting feature is supported and if the Media Burst request with same or higher priority is requested, expanding Media Burst transmitting time SHALL be revoked, except in the case when on-going Media Burst pre-emptive priority.	2.1
FUNC-MBC-ED-004	In case that the PoC Client is transmitting has pre-emptive priority and another pre-emptive Media Burst request is not requested, the PoC Server MAY expand duration of Media Burst transmitting. If the expanding duration of Media Burst transmitting feature is supported and if the Media Burst with Pre-emptive priority is requested, expanding duration of speaking SHALL be revoked after current maximum speaking duration.	2.1

Table 99: Unrealized PoC Requirements on Expanding Duration for Media Burst Transmitting

F.2.2.7.8 Interrupted Floor Recovery

PoC V1.0 Service Enabler has Talk Burst priority levels. One of the levels is pre-emptive. It enables the PoC User to interrupt another PoC User who is transmitting currently. If a PoC User with the pre-emptive priority interrupts another PoC User who is transmitting currently, the PoC Service MAY support the following functionality:

Label	Description	PoC Rel Source
Conditionality		
FUNC-MBC-IF-001	The PoC Service Infrastructure MAY support the interrupted floor recovery feature.	2.1
FUNC-MBC-IF-002	The PoC Client MAY support the interrupted floor recovery feature.	2.1
Functionality		
FUNC-MBC-IF-003	The interrupted PoC Client SHALL be suspended from sending the Media.	2.1
FUNC-MBC-IF-004	After the Pre-emptive user releases his floor, the floor SHALL be immediately granted back to the interrupted PoC User who has been suspended providing another PoC User with a Pre-emptive priority has not request the floor.	2.1
FUNC-MBC-IF-005	When the Media Burst permission is granted back to the interrupted PoC Client, the PoC Client SHALL get confirmation from the PoC User before encoding and sending the Media. NOTE: The term 'floor' will be replaced after the appropriate word is found.	2.1

Table 100: Unrealized PoC Requirements on Interrupted Floor Recovery

F.2.2.7.9 Queue positions of all PoC Users in the Media Burst request queue

This functionality of the PoC enabler will deliver information of all the PoC Users queued on the Media Burst request queue, upon receiving a request from the PoC User.

Label	Description	PoC Rel Source
Conditionality		
FUNC-MBC-QP-001	The PoC Service Infrastructure MAY support delivering the queue positions of all queued PoC Users in the PoC Session when queuing is supported.	2.1
FUNC-MBC-QP-002	The PoC Client MAY support requesting queue positions of all queued PoC Users in the PoC Session.	2.1
Functionality		
FUNC-MBC-QP-003	The PoC Service Infrastructure SHALL be able to deliver the queue positions of all PoC Users in the Media Burst request queue, if requested by the PoC Client.	2.1
FUNC-MBC-QP-004	The PoC Client SHALL be able to request the PoC Service Infrastructure for the queue positions of all the PoC Users in the Media Burst request queue.	2.1

Table 101: Unrealized PoC Requirements on Queue positions of all PoC Users in the Media Burst request queue.

F.2.2.8 Interaction with XML Document Management and Presence

F.2.2.8.1 PoC Group Policies

PoC Group policies are policies that apply to a specific PoC Group only. For example expel rights and releasing rules may be attached to a PoC Group

Label	Description	PoC Rel Source
Conditionality		
FUNC-XDM-GP-001	The PoC Service Infrastructure MAY support PoC Group policies.	2.1
FUNC-XDM-GP-002	The PoC Client MAY support PoC Group policies.	2.1
Functionality		
FUNC-XDM-GP-003	A PoC User MAY set and modify general PoC Group policies used for Ad hoc PoC Group Sessions initiated by the PoC User, if not set in the PoC Session setup.	2.1
FUNC-XDM-GP-004	At the initiation of an Ad hoc PoC Group Session and/or during an Ad hoc PoC Session the initiator of the Ad hoc Group PoC Session MAY set and modify PoC Group policies specific for this Ad hoc PoC Group Session.	2.1

Table 102: Unrealized PoC Requirements on PoC Group Policies

F.2.2.8.2 Dynamic PoC Groups

PoC Enabler supports the use of rules to specify the membership of PoC Groups. PoC Groups with memberships determined in this way are called Dynamic PoC Groups, since memberships may change dynamically, depending on the evaluation of the rules.

Informational Note: Some requirements or parts of requirements referred in this subclause rely on requirements from the CBUS Enabler and are described in [OMA CBUS RD 1.0]. Since the CBUS Enabler development is independent, these requirements may change within the scope of CBUS Enabler.

Label	Description	PoC Rel Source
Conditionality		
FUNC-XDM-DG-001	PoC Service Infrastructure MAY support the Dynamic PoC Groups functionality.	2.1
FUNC-XDM-DG-002	The PoC Client MAY support the Dynamic PoC Groups functionality.	2.1

Functionality		
FUNC-XDM-DG-003	A PoC Group Administrator SHALL be able to specify a set of rules for the membership of Pre-arranged or restricted Chat PoC Groups.	2.1
FUNC-XDM-DG-004	A PoC User initiating an Ad hoc PoC Group Session SHALL be able to specify a set of rules for the membership of the Ad hoc PoC Group at the set up of the Ad hoc PoC Group Session.	2.1
FUNC-XDM-DG-005	A PoC User SHALL be invited to a PoC Session of a Dynamic PoC Group during PoC Session set up.	2.1
FUNC-XDM-DG-006	A PoC User SHALL be allowed to join or rejoin an ongoing PoC Session of a Dynamic PoC Group if and only if the set of rules for the Dynamic PoC Group has been evaluated to match for the PoC User.	2.1
FUNC-XDM-DG-007	Condition Re-evaluation MAY be supported in the PoC Client and SHALL be supported in the PoC Service Infrastructure. NOTE: The continuous monitoring and re-evaluation of Dynamic PoC Group Members are moved to CBUS V1.0, see [OMA CBUS RD 1.0].	2.1
FUNC-XDM-DG-008	If the PoC Client supports 'Condition Re-evaluation' then the PoC User, who specified the rules for Dynamic PoC Group SHALL be able to additionally require, that during an ongoing PoC Session the members of the Dynamic PoC Group whether Participants or not, are continuously monitored and the Dynamic PoC Group rules are re-evaluated continuously. NOTE: The continuous monitoring and re-evaluation of Dynamic PoC Group Members are moved to CBUS V1.0, see [OMA CBUS RD 1.0].	2.1
FUNC-XDM-DG-009	If the PoC Server supports Condition Re-evaluation and if for a PoC Session ‘Condition Re-evaluation’ has been requested then the following SHALL apply during an ongoing PoC Session: • If for a PoC User who is a member of the Dynamic PoC Group, who is not a Participant in the PoC Session, the Dynamic PoC Group rules has been re-evaluated tomatch, this PoC User SHALL be (re)invited by the PoC Server to the PoC Session, unless he had previously declined such an invitation or previously had been expelled from the PoC Session or previously explicitly had left the PoC Session. • If for a Participant in a PoC Session the Dynamic PoC Group rules has been re-evaluated to not match any longer, this SHALL be signalled to the PoC Client and the Participant SHALL be removed from the PoC Session.	2.1
FUNC-XDM-DG-010	If PoC Client and the PoC Service Infrastructure support Dynamic PoC Groups, CBUS Enabler SHALL be used for evaluating the Dynamic PoC Group rules.	2.1
FUNC-XDM-DG-011	If Dynamic PoC Group rules are supported, then at least rules that are based on user’s personal information, location or on presence status information SHOULD be supported, and a combination of these MAY be supported.	2.1

FUNC-XDM-DG-012	A PoC User who is a member of a Dynamic PoC Group of type Chat PoC Group or Pre-arranged PoC Group SHALL be able to subscribe to the status of the Dynamic PoC Group and receive a notification as soon as there is at least one other PoC User who matches the rules of the Dynamic PoC Group, other than the subscribing PoC User. NOTE: The requirement to notify the PoC User at the conditions mentioned herein is moved to CBUS V1.0, see [OMA CBUS RD 1.0].	2.1
FUNC-XDM-DG-013	A PoC User, who is a member of a Dynamic PoC Group of type Chat PoC Group or Pre-arranged PoC Group, SHALL be able to subscribe to the status of the Dynamic PoC Group and receive a notification when another PoC User who matches the rules becomes an active member of the Dynamic PoC Group or when another PoC User who was an active member no longer matches the rules and ceases to be an active member of the Dynamic PoC Group. NOTE: The requirement to notify the PoC User at the conditions mentioned herein is moved to CBUS V1.0, see [OMA CBUS RD 1.0].	2.1
FUNC-XDM-DG-014	A PoC Group Administrator MAY create a Dynamic PoC Group based on rules without the PoC Group Administrator explicitly predefining a set of members. In this case the PoC Service Infrastructure will populate the PoC Group Members dynamically based on the rules specified subject to the prior consent of the evaluated and matched PoC User to become a member of a Dynamic PoC Group of this type NOTE 1: In the case of Dynamic PoC Groups defined as above the scope of the search to populate the Dynamic PoC Group Members is a matter of policy for the PoC Service Provider and may or may not be restricted. The actual implementation of this requirement is an architectural issue. NOTE 2: The requirement to populate the Dynamic PoC Group Members dynamically for a PoC Group that is pre-defined without members is moved to CBUS V1.0, see [OMA CBUS RD 1.0].	2.1
FUNC-XDM-DG-015	A PoC User MAY publish Presence Information about themselves that can be used for the evaluation of rules for the membership of Dynamic PoC Groups.	2.1
FUNC-XDM-DG-016	A PoC User that matches the Dynamic PoC Group rules of a Dynamic PoC Group MAY provide consent to become a member of the Dynamic PoC Group based on Dynamic PoC Group rules.	2.1
FUNC-XDM-DG-017	The PoC Service Infrastructure SHALL be able to create PoC Groups to which PoC Users are added dynamically at the crisis service invocation. Only PoC Service Provider can create such a special crisis PoC Group to which an authorized user is assigned. Only authorized PoC User can invoke PoC Sessions with Crisis Handling Request through his assigned Crisis PoC Group.	2.1

FUNC-XDM-DG-018	It SHALL be possible for a PoC User authorized to initiate a PoC Session for a Dynamic PoC Group, except for a Chat PoC Group, to initiate the PoC Session regardless of whether the initiator matches the rules for the Dynamic PoC Group or not, and need not be removed from the PoC Session at re-evaluation of the Dynamic PoC Group rules. NOTE: The initiation is still subject to other rules and policies applicable for the action, which may restrict the PoC User from performing the action.	2.1
FUNC-XDM-DG-019	A PoC User authorized to add Participants to the Dynamic PoC Group Session SHALL be allowed to add a Participant to the ongoing PoC Session regardless of whether the added Participant matches the rules for the Dynamic PoC Group or not. The added Participant need not be removed from the PoC Session at re-evaluation of the Dynamic PoC Group rules. NOTE: The addition is still subject to other rules and policies applicable for the action, which may restrict the PoC User from performing the action.	2.1
FUNC-XDM-DG-020	A PoC User SHALL be able specify the rules for a Dynamic PoC Group of type Ad-hoc PoC Group and subscribe to the status of a URI list and receive a notification as soon as there is at least one PoC User according to the URI list who matches the rules of the Dynamic PoC Group. NOTE: The requirement to notify the PoC User at the conditions mentioned herein is supported by CBUS V1.0, see [OMA CBUS RD 1.0].	2.1
FUNC-XDM-DG-021	A PoC User SHALL be able to subscribe to the status of a Dynamic PoC Group of type Ad-hoc PoC Group and receive a notification when a PoC User who is listed in the URI list for the Ad-hoc PoC Group and who matches the rules becomes an active member of the Dynamic PoC Group or when a PoC User who is listed in the URI list for the Ad-hoc PoC Group and who was an active member no longer matches the rules and ceases to be an active member of the Dynamic PoC Group. NOTE: The requirement to notify the PoC User at the conditions mentioned herein is supported by CBUS V1.0, see [OMA CBUS RD 1.0].	2.1

Table 103: Unrealized PoC Requirements on Dynamic PoC Groups

F.2.2.8.3 Presence requirements

The Presence support introduced in PoC 1.0 and PoC 2.0 needs to be enhanced to support multiple User Equipments.

Label	Description	PoC Rel Source
Conditionality		
FUNC-PRS-MG-001	The PoC Service Infrastructure MAY support the presence functionality.	2.1
Functionality		
FUNC-PRS-MG-002	The PoC Service Infrastructure SHALL handle presence information with multiple User Equipments having the same PoC Address including PoC Service Settings (e.g. PoC Session Barring).	2.1
FUNC-PRS-MG-003	The PoC Service Infrastructure SHOULD be able to handle presence information including media capabilities of multiple User Equipments having the same PoC Address.	2.1

Table 104: Unrealized PoC Requirements on Presence Requirements

F.2.2.8.4 Management of PoC Groups and PoC Group Member Lists

The PoC Service supports enhancements to management of PoC Groups and PoC Group Member Lists. In order to save network resources it is possible to specify a lifetime of a PoC Group and associated PoC Group Member Lists after which the PoC Group and PoC Group Member Lists is deleted if the PoC Group has not been used or accessed during that time.

Label	Description	PoC Rel Source
Conditionality		
FUNC-XDM-GL-001	The PoC Service Infrastructure SHOULD support the management of PoC Groups and PoC Group Member Lists.	2.1
FUNC-XDM-GL-002	If PoC Client is able to create PoC Groups, the PoC Client SHOULD support the management of PoC Groups and PoC Group Member Lists.	2.1
Functionality		
FUNC-XDM-GL-003	In order to ensure that network resources are not wasted with obsolete or unused lists PoC Service Infrastructure SHOULD support removal of PoC Groups and PoC Group Member Lists that have not been accessed or used for PoC Sessions for a period of time set by the PoC Service Provider or by the PoC Subscriber.	2.1
FUNC-XDM-GL-004	Specifically it SHOULD be possible to specify an expiration time by the PoC Service Provider or PoC Subscriber when creating PoC Groups and PoC Group Member Lists and the deletion of the PoC Groups and PoC Group Member Lists when the expiration time expires.	2.1
FUNC-XDM-GL-005	For PoC Groups and PoC Group Lists that do not have an expiration time, it SHOULD be possible for the PoC Service Infrastructure to delete PoC Groups and associated PoC Group Member Lists, which have not been used for a period of time set by the operator.	2.1
FUNC-XDM-GL-006	The PoC Service infrastructure SHOULD notify the PoC Group Administrator and PoC Group members of a pending deletion of PoC Groups and PoC Group Member Lists and SHOULD provide a mechanism to allow the PoC Group Administrator to request that the lifetime of the notified PoC Group or PoC Group Member List is renewed.	2.1
FUNC-XDM-GL-007	It SHOULD be possible for the PoC Service Provider to charge for the creation and storage of PoC Groups and PoC Group Member Lists and to charge based on the size of these documents and the period of time that such PoC Groups and PoC Group Member Lists exist.	2.1

Table 105: Unrealized PoC Requirements on Management of PoC Groups and PoC Group Member Lists

F.2.2.9 PoC Interworking Service

F.2.2.9.1 PoC User Experience Using PoC Interworking Service

The user experience for PoC interworking service is relevant for Participants in PoC Sessions involving interworking, which may include PoC Users in PoC Networks, PoC Remote Access users and External P2T Network users.

Label	Description	PoC Rel Source
Conditionality		
FUNC-IWF-UE-001	The PoC Service Infrastructure MAY support the PoC interworking service.	2.1
FUNC-IWF-UE-002	The PoC Client MAY support the PoC interworking service.	2.1
Functionality		
FUNC-IWF-UE-003	Introduction of PoC V2.0 interworking service SHALL not result in significantly diminished performance (e.g., delays, QoS, etc.) for PoC Users operating in the PoC Network.	2.1

Table 106: Unrealized PoC Requirements on Interworking and PoC User Experience

F.2.2.9.2 Interaction of PoC - Video only Session with Other Voice Call Enablers

A capability is provided by the PoC Client to initiate a PoC Session with video Media, invoked by or invoking another capability (such as a CS or VoIP client) resident in the same User Equipment as the PoC Client. This capability enables Value Added PoC Services.

Label	Description	PoC Rel Source
Conditionality		
FUNC-IWF-VS-001	The PoC Service Enabler MAY support the Interaction of PoC - Video only Session with other voice call enablers.	2.1
FUNC-IWF-VS-002	The PoC Client MAY support the interaction of PoC - video only PoC Session with other voice call enablers.	2.1
Functionality		
FUNC-IWF-VS-003	PoC Users SHALL be able to invite other PoC Users to a video only PoC Session, anytime during an active voice call or at the voice call initiating time.	2.1
FUNC-IWF-VS-004	A PoC User who joins the voice call SHALL also be invited to the video only PoC Session.	2.1
FUNC-IWF-VS-005	A PoC User SHALL have the option to participate only in the voice call, without receiving the optional video stream.	2.1
FUNC-IWF-VS-006	Anytime during an active voice call or at the voice call initiating time, the user SHALL have the option to add and release the video stream in the PoC Session.	2.1
FUNC-IWF-VS-007	If a Participant releases the voice call, the Participant's corresponding video PoC Session SHALL also be automatically released.	2.1
FUNC-IWF-VS-008	The Value Added PoC Service SHALL support the following characteristics:All Participants in the PoC Session MAY be able to receive the list of Participants that are capable to receive video.	2.1
FUNC-IWF-VS-009	The PoC Service SHALL be able to establish or terminate the PoC Session requested by the PoC Client.	2.1
FUNC-IWF-VS-010	The PoC Service SHALL automatically end the video Session when the voice call ends.	2.1
FUNC-IWF-VS-011	The PoC Service SHALL support 1-1, Ad-hoc, Chat, and Pre-arranged PoC Group Sessions.	2.1
FUNC-IWF-VS-012	The PoC Service SHALL invite the same PoC Users to the PoC Session that are currently in the voice calls. Participant, who leaves the voice call SHALL be removed from the PoC Session. User who joins the voice call SHALL be added to the PoC Session.	2.1
FUNC-IWF-VS-013	The interaction of PoC - video only PoC Session with other voice call enablers functionality it SHALL use the same Media Burst Control mechanism as specified in the PoC Service Enabler NOTE: In case of the PoC Group CS teleconference the interaction with the PoC Service is out of scope of PoC version 2.	2.1

Table 107: Unrealized PoC Requirements on Video Session with Other Call Enablers

F.2.2.9.3 PoC Interworking with IVR System

PoC interworking with the IVR system enables the PoC Users to access the IVR System using their PoC Service. This will provide more flexibility for those users, who are already in a PoC conversation, and who may have PoC as their preferred means of communication.

Label	Description	PoC Rel Source
Conditionality		

FUNC-IWF-IVR-001	PoC Service Infrastructure MAY support the interworking with the IVR system.	2.1
Functionality		
FUNC-IWF-IVR-002	In order to interworking with IVR system, PoC Service enable SHALL be able to transmit DTMF tones.	2.1

Table 108: Unrealized PoC Requirements on Interworking and IVR Systems

F.2.2.9.4 PoC Interworking with Voice-enabled Instant Messaging

A PoC supports interworking between the PoC Users and IM users who are equipped with voice-enabled IM clients ("Voice IM" users), or voice chat users, thus allowing for symmetric voice communications between PoC Users and voice IM or voice chat users.

NOTE: For purposes of PoC interworking, an IM system serving voice-enabled IM clients (or a HDVC system), which is interconnected to the PoC Network, is treated as a virtual External P2T systems for exchanging voice messages (i.e., Talk Burst) in a half-duplex manner. PoC to voice IM (P2VIM) interworking, including PoC to HDVC (P2HDVC) interworking, is intended to enable basic PoC communications and may support only a subset of PoC, IM or voice chat functionality. The PoC interworking will provide the necessary functions to support PoC Users communicating with voice IM or HDVC users and should ensure that the PoC User experience is not negatively affected.

Label	Description	PoC Rel Source
Conditionality		
FUNC-IWF-VIM-001	PoC Service Infrastructure MAY support the interworking with PoC-to-Voice IM (P2VIM), and PoC-to-Half-Duplex Voice Chat (P2HDVC).	2.1
FUNC-IWF-VIM-002	PoC Client MAY support the interworking with PoC-to-Voice IM (P2VIM) and PoC-to-Half-Duplex Voice Chat (P2HDVC).	2.1
Functionality		
FUNC-IWF-VIM-003	Both voice IM and Half Duplex Voice Chat interworking SHALL be subject to Service Provider Policy and agreement with voice IM or HDVC service provider(s), as applicable.	2.1
FUNC-IWF-VIM-004	P2VIM or P2HDVC Interworking SHALL enable interworking between PoC Users and authorised voice IM, or HDVC, users only; general unlimited interworking between PoC and IM or voice chat networks is beyond the scope of P2VIM or P2HDVC interworking.	2.1
FUNC-IWF-VIM-005	Voice quality of PoC Sessions between PoC Users and Voice IM or HDVC users SHOULD not be unnecessarily degraded by mechanisms and procedures in the PoC Network; similar issues in the voice IM or HDVC network affecting the voice quality (e.g., latencies) therein are beyond the scope of PoC Service Enabler.	2.1
FUNC-IWF-VIM-006	For purposes of PoC interworking, the voice IM, or HDVC, system is treated as a virtual External P2T Network; authorized voice IM or HDVC users are treated as authorized External P2T Network users. If P2VIM or P2HDVC interworking is supported, unless otherwise specified, the general PoC interworking Service requirements apply:	2.1

Table 109: Unrealized PoC Requirements on Interworking and Voice Enabled IM

F.2.2.9.5 Interaction of PoC – Non-voice Media Only Session with Other Voice Call Enablers

This section specifies PoC Service Enabler requirements for interaction between non-voice PoC Sessions, such as video, images and text and other voice enablers, e.g. VoIP, circuit switched calls etc.

Label	Description	PoC Rel Source
Conditionality		
FUNC-IWF-NV-001	The PoC Service Infrastructure MAY support the interaction of PoC – non-voice Media only PoC Session with other voice call enablers.	2.1
FUNC-IWF-NV-002	The PoC Client MAY support the interaction of PoC – non-voice Media only PoC Session with other voice call enablers.	2.1
Functionality		
FUNC-IWF-NV-003	A capability MAY be provided by the PoC Client to initiate a non-voice Media only PoC Session, invoked by or invoking another capability (such as a CS or VoIP client) resident in the same User Equipment as the PoC Client. The requirements for such a non-voice Media only PoC Session SHALL have requirements analogous to the requirements described in section 6.1.13 of [OMA PoC RD 2.1].	2.1

Table 110: Unrealized PoC Requirements on Interworking - Non-Voice Only Session with Other Voice Call Enablers

F.2.2.10 Value Added PoC Services

F.2.2.10.1 PoC Voting Service

PoC voting is a mechanism to collect the opinion from Participants in a PoC Session, evaluate, and notify the result to Participants without interference with Participants who have the permission to send Media. PoC voting is an optional service.

Label	Description	PoC Rel Source
Conditionality		
FUNC-VAS-VO-001	The PoC Service Infrastructure MAY support the PoC voting service.	2.1
FUNC-VAS-VO-002	The PoC Client MAY support the PoC voting service.	2.1
Functionality		
FUNC-VAS-VO-003	The PoC voting service SHALL be able to specify Vote Group Type (open/closed).	2.1
FUNC-VAS-VO-004	The PoC voting service SHALL be able to specify Vote Result Type (disclosed/undisclosed/secret).	2.1
FUNC-VAS-VO-005	The PoC voting service SHALL be able to specify Vote Response Type (real time/accumulated).	2.1
FUNC-VAS-VO-006	The PoC voting service SHALL be able to specify the timeout period in case of accumulated response type voting.	2.1
FUNC-VAS-VO-007	The PoC voting service SHALL be able to specify Vote Processing Entity (PoC Server, originating PoC Client or a designated PoC Client). NOTE: PoC Server as Vote Processing Entity is FFS	2.1
FUNC-VAS-VO-008	The PoC voting service MAY be performed in respect with Media Bursts transmission.	2.1
FUNC-VAS-VO-009	A privileged Participant SHALL be able to specify a voting question with several options and send it to the PoC Server for the request of voting initiation.	2.1
FUNC-VAS-VO-010	Upon the receipt of the voting initiation request, the PoC Server SHALL be able to send the voting question(s) message to all Participants of a PoC Session.	2.1
FUNC-VAS-VO-011	Upon the receipt of the voting question message, the Participants SHALL be able to respond to that question(s) and send their choice to the PoC Server.	2.1
FUNC-VAS-VO-012	The Vote Processing Entity SHALL be able to receive and evaluate the PoC voting responses from Participants.	2.1

FUNC-VAS-VO-013	The PoC Server SHALL be able to notify the PoC voting evaluation result to all Participants depending on the setting of Vote Group Types, Vote Result Types, and Vote Response Types.	2.1
FUNC-VAS-VO-014	Each Participant SHALL be able to receive the PoC voting evaluation results depending on the setting of Vote Group Types, Vote Result Types, and Vote Response Types.	2.1

Table 111: Unrealized PoC Requirements on PoC Voting Services

F.2.2.11 Additional Services

F.2.2.11.1 PoC External Entity

The PoC External Entity function allows an external entity to be connected to a PoC Service Infrastructure. The external entity acts as a PoC Client and can perform tasks that are out of scope of PoC e.g. a camera supervising a building. It will also be possible for a PoC User to remotely control the external device.

Label	Description	PoC Rel Source
Conditionality		
FUNC-ADD-EX-001	The PoC Service Infrastructure SHALL support the handling for the PoC External Entity feature.	2.1
FUNC-ADD-EX-002	The PoC Client MAY support the handling for the PoC External Entity feature.	2.1
Functionality		
FUNC-ADD-EX-003	The PoC V2.0 Service Infrastructure SHALL support transport paths for accessing (e.g., for the purpose of sending PoC External Entity control messages) to PoC External Entity from the PoC Client.	2.1
FUNC-ADD-EX-004	The PoC V2.0 Service Infrastructure SHALL support a mechanism to allow a PoC Client to access a PoC External Entity exclusively.	2.1
FUNC-ADD-EX-005	An authorised PoC User SHALL be able to manage services provided by PoC External Entity.	2.1

Table 112: Unrealized PoC Requirements on PoC External Entity

F.2.2.11.2 Retrieve List of PoC Group Identities

PoC User can retrieve complete list of PoC Group Identities including both PoC Groups owned by the PoC User and those where the PoC User is added as a member.

Label	Description	PoC Rel Source
Conditionality		
FUNC-RLG-001	The PoC Service Infrastructure MAY support retrieving list of PoC Group Identities functionality.	2.1
FUNC- RLG -002	The PoC Client MAY support retrieving list of PoC Group Identities functionality.	2.1
Functionality		
FUNC- RLG -003	If authorized, the PoC Client SHALL be able to request retrieving list of PoC Group Identities including both PoC Groups owned by the PoC User and those where the PoC User is added as a member. Upon receiving such request, the PoC infrastructure SHALL be able to send back complete list of PoC Group Identities. NOTE: Unrealized PoC Requirements on Agreement among operators may allow PoC User to retrieve list of PoC Group Identities including the identities of PoC Groups from other Service Providers.	2.1
FUNC- RLG -004	PoC Client SHOULD display on the device the received list of PoC Group Identities.	2.1

Table 113: Unrealized PoC Requirements on Retrieve list of PoC Group Identities

F.2.2.12 Usability

F.2.2.12.1 Alert for Unavailable PoC Users

The PoC Service Enabler makes it possible to send an alerting message to other PoC User(s) not currently available for the PoC Service in order to get them to activate the PoC Service and initiate, rejoin or join a PoC Session.

Label	Description	PoC Rel Source
Conditionality		
FUNC-USA-UC-001	The PoC Service Infrastructure MAY support the alert for unavailable PoC Users functionality.	2.1
FUNC-USA-UC-002	The PoC Client MAY support the alert for unavailable PoC Users functionality.	2.1
Functionality		
FUNC-USA-UC-003	After unsuccessful PoC Session establishment attempts to one or more PoC Users, the PoC V2.1 Service Enabler MAY support sending an alerting message to those PoC Users that are not currently available, providing the PoC Service Settings of the PoC Users allow to do so.	2.1
FUNC-USA-UC-004	The alerting message SHALL contain the appropriate PoC contact information (e.g., originating PoC User's PoC address or PoC Group Session Identity).	2.1
FUNC-USA-UC-005	Upon receiving an alerting message, a PoC Client which is not available for the PoC Service, SHALL be able to activate the PoC Service, if necessary, and initiate, join or rejoin a PoC Session in a convenient way (e.g., automatically) according to the contact information indicated in the alerting message.	2.1
FUNC-USA-UC-006	This functionality SHOULD use PoC mechanisms if possible (e.g., destination PoC User has activated Incoming Session Barring, but not Incoming Personal Alert Barring). Otherwise, other alerting mechanisms outside the PoC V2.0 Service Enabler MAY be triggered from the originating PoC Client.	2.1
FUNC-USA-UC-007	It SHOULD be possible to specify an expiration time for the alerting message either by the PoC User sending the alert or the PoC Infrastructure in case the PoC Infrastructure sends the alert"	2.1

Table 114: Unrealized PoC Requirements on Alert for Unavailable Users